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No. 28

Organic Chemical Output Up 18% in 1954

Price Troubles Seen in Increased Pesticide Inventory

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON—Government officials analyzing the Tariff Commission's preliminary annual report on production and sales of pesticides and other organic agricultural chemicals, see in the inventory increase on Jan. 1, 1955, over the same date for 1954 approximately 62 million pounds, no indications of trade disturbance or price dislocations this year.

They point out that such inventory increases as appear in the comparisons of production and sales for the past two years are largely in a few categories where inventory increases may be accounted for through diversions into other products and do not necessarily indicate an unusually large inventory position for Jan. 1, 1955.

Other indirect information from government sources relate that observations made through conversations with the trade in the field disclosed no concern that any heavy inventory position was being reflected by trade sources.

Tending to confirm the attitude of government officials further is the Tariff Commission's comparative sales report for 1953 and 1954 which shows

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Work Started on Standard Oil of California Plant

RICHMOND, CAL. — The M. W. Kellogg Co., a subsidiary of Pullman, Inc., has announced that it has started initial activities in the construction of a 300 ton a day anhydrous ammonia plant for Standard Oil Company of California. The plant will be part of a multi-million dollar petrochemical expansion by the California firm. (See Croplife, page 1, March 7.)

A substantial proportion of the anhydrous produced in the plant will be used in the manufacture of complete fertilizers, according to officials of the firm.

ORGANIC CHEMICAL PRODUCTION, SALES IN 1954

Pesticides and Other Organic Agricultural Chemicals, Cyclic

Product—	Production 1,000 lb.	Sales			Unit value per lb.
		Quantity 1,000 lb.	Value 1,000 dollars		
Fungicides and seed disinfectants, total	57,993	46,707	20,441		\$0.44
Herbicides and plant hormones, total	63,462	31,890	22,580		.71
Insecticides, total	235,527	200,312	58,926		.29
Total	356,982	278,909	101,947		\$0.37
Pesticides and Other Organic Agricultural Chemicals, Acyclic					
Fumigants, total	34,648	30,677	5,867		\$0.19
Fungicides, seed disinfectants, herbicides and insecticides, total	27,093	26,219	16,489		.63
Total	61,741	56,896	22,356		\$0.39
Grand total	418,723	335,805	124,303		\$0.37

Wide Range of Plant Food Topics Discussed at Pacific Northwest Fertilizer Meeting

BOISE, IDAHO—Speakers from the U.S. Department of Agriculture, agricultural colleges, and custom fertilizer applicators were included on the three-day program of the Pacific Northwest Fertilizer Conference here June 28-30. It was the sixth annual conference for the group.

Sponsored jointly by the state agricultural institutions of Idaho, Oregon and Washington and the Soil Improvement Committee of the Pacific Northwest Plant Food Assn., the program called for the presentation of papers by 24 individuals during the three days.

Lee I. Painter, assistant agronomist at the University of Idaho, Aberdeen, Idaho, reported on results of fertilizer studies on potatoes that have been carried on at Aberdeen on a limited scale for 20 years. He said although earlier trials showed increases in yield from applications of

nitrogen and phosphate, they were not as striking as those found at the present time.

"Trials carried out since 1949 have shown that N and P are the two limiting nutrient elements in potato production," he said. Applications of potash were not beneficial unless made with extremely high applications of nitrogen and phosphate.

G. O. Baker, professor of agronomy, University of Idaho, Moscow, in discussing wheat fertilization in the Pacific Northwest, said that the agricultural experiment stations of that area have been investigating the need of fertilizer on wheat for many years but it has only been in recent years that the farmers have been using appreciable quantities of fertilizers on this crop.

"Nitrogen is the main nutrient needed, and with the increase in the

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1955 Wheat Support Established at \$2.08 Bu.

WASHINGTON—The U.S. Department of Agriculture last week announced that the national average support rate for 1955-crop wheat will be \$2.08 bu. This compares with a rate of \$2.24 for the 1954 crop, with the decrease reflecting the drop in support from 90% to 82½% of parity.

Sales Total 336 Million Pounds, Value \$124 Million

WASHINGTON—Production of all pesticides and other organic chemicals in 1954 totaled 419 million pounds, an increase of 18% over the 356 million pounds reported for 1953, the U.S. Tariff Commission has reported.

Sales in 1954 were 336 million pounds, valued at \$124 million, compared with 1953 sales of 334 million pounds, valued at \$119 million.

Production in 1954 of cyclic pesticides and other cyclic chemicals in this group amounted to 357 million pounds, compared with 297 million pounds in 1953, an increase of 20%. Sales in 1954 were 279 million pounds, valued at \$102 million, compared with 282 million pounds, valued at \$99 million in 1953.

(Continued on page 20)

Aphids Attacking Late-Sown Grain Crops in Manitoba

WINNIPEG—Grain aphids are endangering late-sown grain crops in Canada's province of Manitoba. Infestation has been aided by abnormally wet conditions.

Malathion has been sprayed on infected fields both in Manitoba and in North Dakota where the outbreak appears to have originated. However, Dr. H. A. Thorsteinson of the University of Manitoba doubts whether there is enough of this insecticide in the province to meet the requirements of a major outbreak.

It is possible, he adds, that dryer conditions might help reduce the incidence of the infestation.

The last outbreak of major proportions in Western Canada was in 1949 when 100,000 acres of wheat and oats were infested. About 75% of the total crop was destroyed.

20 Questions and Answers on Miller Amendment

WASHINGTON—Details of how the new Miller Amendment may affect pesticide manufacturers, distributors, dealers and crop producers may still be somewhat unclear in the minds of many in the trade.

July 22, 1955, will be the date on which the new law becomes effective for tolerances which have already been set. However, as the Federal Register said in its issue of June 10, tolerances or exemptions have not been established for some pesticide chemicals, "and it is not possi-

ble at this time to determine whether tolerances will be established for them before the end of the current growing season. . . . Agriculturists, pesticide manufacturers and distributors and food-law enforcement officials need to know the status of these pesticides under the amendment prior to July 22, 1955, so that they will know whether the pesticides should be employed throughout the 1955 growing season."

As reported in Croplife (Page 1, issue of June 27) the Department of

Health, Education and Welfare will consider requests for an extension of the effective date of the law for specific pesticides, but there should not be an extension of the date of the amendment for uses of pesticide chemicals for which tolerances have already been established.

Some 20 questions and answers about the Miller Amendment, as originally presented by the National Agricultural Chemicals Assn. in its News and Pesticide Review, offer a review of the situation. Although di-

rected largely to growers, the information contained is of considerable interest also to people in the trade.

The questions and answers are as follows:

1. What is the Miller Amendment?

This is a new law which affects all growers who use pesticide sprays and dusts in combatting crop-destroying insects, weeds, rodents and plant diseases. It sets up

(Continued on page 17)

Program Committee Named For NAC September Meeting

WASHINGTON—M. R. Budd, of Hercules Powder Co., Wilmington, Del., has been named chairman of the Program Committee for the National Agricultural Chemicals Assn.'s 22nd annual meeting in Spring Lake, N.J., Sept. 7-9, L. S. Hitchner, NAC executive secretary, has announced.

Members of the committee are: Douglas G. Bennett, Phelps Dodge Refining Co., New York; Silas Besthoff, Faesy & Besthoff, Inc., New York; J. L. Damon, General Chemical Division, Allied Chemical & Dye Corp., New York; L. G. Gemmell, Geigy Chemical Corp., New York; Howard J. Grady, California Spray-Chemical Corp., Washington, D.C.; Charles L. Hovey, Eastern States Farmers' Exchange, Inc., West Springfield, Mass.; Dr. Alfred Weed, Olin Mathieson Chemical Corp., New York, and Wayne Yoder, American Cyanamid Co., New York.

USDA Issues Garden Pest Control Handbook

WASHINGTON—"Insects and Diseases of Vegetables in the Home Garden," a new publication, was issued July 1 by the U.S. Department of Agriculture. It contains four color plates, 45 black-white drawings of insects and text briefly describing more than a hundred insects and diseases that attack vegetables.

Single copies are available from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C. Ask for Home and Garden Bulletin No. 46. The new handbook supersedes "Vegetable Gardeners' Handbook of Insects and Diseases."

SPECIALIST RESIGNS

LARAMIE, WYO.—Guy O. Woodward, Wyoming Agricultural Extension Service Irrigation specialist for nearly seven years, resigned effective July 1 to become educational director of the Sprinkler Irrigation Assn. with headquarters in Salt Lake City.

Southern Control Officials Hear Talk On Reducing Number of Fertilizer Ratios

NEW ORLEANS—Members of the Association of Southern Feed & Fertilizer Control Officials heard a report on "The Basis for Determining Fertilizer Grades," by Frank E. Boyd, Virginia-Carolina Chemical Corp. agronomist, at their 13th annual convention at the Jung Hotel here June 22-24.

Mr. Boyd illustrated how a large number of fertilizer grades in any given state could be reduced to a smaller number. He listed the following advantages of "a few rather permanent ratios and higher grades over a multiplicity of constantly changing grades":

- (1) Less storage space required in factories.
- (2) Less price spread between low and high grades.

(3) Encourages farmers to follow recommendations.

(4) Less cost per pound of plant food in higher analysis goods.

(5) Easier handling on loading platform.

(6) Saving in registration, tag and bag printing, record keeping and chemical control, and

(7) Creates more confidence in part of consumer.

Mr. Boyd reviewed the grade situation in a number of southern states pointing out that even in states that permit unlimited registration, a small number of grades supplies most of the tonnage.

Improvements in the number of grades, he said, must come about through the cooperative effort of research, industry and education.

"The contributions of these three groups can best be coordinated through some organization to which all subscribe," he said. "The role of each group must be clearly defined but in the end there can be only one unified program if the ultimate consumer is to have confidence in his advisers."

Mr. Boyd said that, on this basis it is the function of research to provide the basic facts from which may be selected the proper N-P-K ratio or grades to balance the available soil plant foods for the crops to be grown.

"Experiment stations get the facts, the educational groups carry the message and the industry supplies the essential materials," he said. "To be practical the facts and the message must be such that the industry can build the grades out of the materials available."

"This may mean compromise and coordination of effort among research, industry and education groups to the end that our farmers may be served."

The convention got under way June 22 with reports by Bruce Pomeroy, Lexington, Ky., secretary-treasurer of the group, and E. Epps, Jr., Baton Rouge, La., president. Dave L. Pearce, commissioner of Louisiana Department of Agriculture and Immigration, welcomed the delegates.

M. B. Sturgis, head of the Agronomy Department at Louisiana State University, talked about relations between control officials and agronomists. The remainder of the June program included talks on feed control subjects. Banquet speaker for the evening was C. H. Fisher, chief of the Southern Regional Research Laboratory, New Orleans.

The June 23 program included meetings of the Feed Standards Committee and the Fertilizer Committee. On June 24 delegates heard a report of control officials and reports of committees.

Elwood I. Lentz New General Manager Of Western Phosphates

NEW YORK—The appointment of Elwood I. Lentz as general manager of Western Phosphates, Inc. of Ogden, Utah was announced July 6 by Hans Stauffer, president.

Mr. Lentz, has been vice president and plant manager since the founding of the company in 1952. Prior to that time he had been associated with Stauffer Chemical Co.

Western Phosphates, Inc. manufactures treble superphosphate, phosphoric acid and ammonium phosphate at its \$5,000,000 plant at Garfield, Utah, just south of Salt Lake City. The company is owned by Kennecott Copper Corp., American Smelting and Refining Co. and Stauffer Chemical Co.

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INSECT, PLANT DISEASE NOTES

Armyworms Threaten Massachusetts Again

BOSTON — Massachusetts farmers were warned this week that armyworms are on the move earlier than usual and that measures must be taken immediately to prevent a recurrence of the disastrous invasion of last year. Eastern Massachusetts reported the first armyworms on the move, and potato blight was detected three weeks earlier than normal in Franklin County. The warning came from entomologists at the University of Massachusetts.

Grasshoppers Become Serious in Missouri

COLUMBIA, MO. — Hoppers still are the most serious threat to the entire state. Numbers continue ex-

ceptionally high, and heavy damage is beginning to show up in several sections of the state.

So far, weather conditions have killed very few hoppers. Fungus disease is still being found only rarely and as yet, has not been an important factor. If we should have a prolonged period of high temperatures with high humidity, fungus could help, but such conditions would be rather unusual for this time of year.

Alfalfa and clovers are taking the worst beating at the present time, and row crops in the southern part of the state are close seconds. Throughout the entire state, nearly every unsprayed alfalfa field is loaded with hoppers, and as soon as they get more size in north Missouri row crops damage will also become heavy.

There aren't nearly as many

chinch bugs over the state as we might have had. Apparently, rains have helped in knocking their numbers down. Some fields, however, are heavily infested. Such fields are widely scattered, and as yet, we have found no community where infestations are uniformly heavy.

We are noticing a lot of corn fields with spotty stands. In closely checking many of such fields, it looks as though several different soil insects—seed corn maggots, seed corn beetles, wireworms, etc.—have been primarily responsible for the skips in stand.

We have been finding a few webworms scattered around. In general, only a few individuals are being found in any field, but we have a report from Bates County that some corn fields there are rather heavily

infested. Damage to corn begins in the lower leaves, and progresses to the stalk.

In the northern part of the state some corn root aphid damage is showing up on corn. It looks a lot like drouth damage. The aphids are small bluish colored insects which feed on the roots of corn.

We have had a lot of questions about mixing insecticides with 2,4-D when spraying corn. This has already been mentioned under chinch bugs, and the same thing applies when spraying corn for grasshoppers with ground equipment. The chemicals are compatible, however, and mixture can be used in spraying of fence rows.—Stirling Kyd and George W. Thomas.

Chinch Bugs and Hoppers for Kansas

MANHATTAN, KANSAS — The chinch bug outbreak continues over a large area of the state. This outbreak area includes most of the Flint Hills region of southeast Kansas and extends westward as far as Riley, Saline, Dickinson and Clay counties.

Grasshoppers continue to increase in size and nymphs are still hatching. Nymphs (1st and 2nd instar) of the red-legged grasshopper, were found in Brown and Doniphan counties, northeast Kansas. Adults of the lesser migratory and the two-lined species, are common throughout many areas of the state.

Five fields in Doniphan County were checked for the occurrence of European corn borers. Infestation levels ranged from 4 to 32% and larvae examined were 2nd and 3rd instar.—David L. Matthew.

Corn Pests Reported in Maryland Counties

COLLEGE PARK, MD.—European corn borer and corn earworm infestations in corn have been reported as general in neighboring states; hence, we may expect damage to corn in Maryland, particularly ear of sweet corn.

Snap beans in Baltimore County have been damaged by pale-striped flea beetle. We are recommending malathion as for bean beetle. Cabbage butterflies are unusually abundant in the fields in central Maryland—infestation of cole crops, cabbageworms will probably follow. Cucumbers in Caroline County have had some trouble with thrips.

Defoliation by elm leaf beetle has been quite general on both eastern and western shores. Trees at College Park show white speckling of the leaves from leafhopper. Mites may also appear.

Flea beetles continue injurious to newly set plants. It is time for hoppers since moths have been on wing. Prevent damage by spraying tobacco while it is small using TDE (Rhothane), 1 qt. of 25% emulsion in 15 to 20 gal. water on 1 acre.—Theo. L. Bissell and Wallace C. Harding.

Insect Infestations Well Along in Iowa

AMES, IOWA — European corn borer damage is showing in tall corn. Populations range from few to 10 or more borers per plant. From 10 to 30% of the larvae are half grown. Control observed in fields where treated checks were left indicated 60 to 70% of the larvae killed.

Tests were conducted with chemicals in W. Pottawattamie County last week in an attempt to determine if post planting control of corn-root aphids is possible. Results indicated that none of the compounds applied to the row 5 gal. spray per acre was effective with or without cultivation. Heavy rains in the area stimulated growth and apparently reduced aphid populations. More and more

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reports indicate the value of pre-planting applications of soil insecticides broadcast and disked in thoroughly in the prevention of ants (and aphids).

Corn leaf aphid numbers are building up all over Iowa. A period of hot weather will probably reduce the population. We are not recommending chemical control at present. European red mite populations are also building up.

Hornflies are present in exceptionally large numbers—up to 1,000 per animal in some herds. Back rubbers are giving excellent control when located where cattle normally loaf. Keep the burlap well-treated with 1% DDT or methoxychlor oil solution.

Stable flies are increasing. They are on cattle only while they feed. There are up to 50 per animal now. Residual applications on cattle are of little value in stable fly control. Treat fences and walls, remove breeding places. Treadle sprayers employing activated pyrethrins are doing a good job of keeping stable flies away from cattle.—Harold Gunerson.

Miscellaneous Pests in New Mexico

STATE COLLEGE, N.M.—Yellow clover aphid populations on alfalfa vary from light to heavy throughout the state. Socorro County reports that they are severe in 100 acres, but light in most alfalfa acreage. Medium infestations are reported in De Baca and Grant counties. Quay County reports 1,500 acres heavily infested.

Stink bugs are present in large numbers on barley and wheat in Socorro, Curry and Grant counties. These insects are also numerous on oats in Chaves County.

Thrips are numerous in alfalfa and cotton fields in Eddy County. Chaves County reports thrips are heavy in barley and oats and are numerous in cotton adjoining these crops.

Aphids (various species) are infesting alfalfa, cotton and black eyed peas in Quay County, barley in Socorro County, and ornamentals in San Miguel County, and fleahoppers are infesting cotton fields in Lea County. They are numerous on goatweed, but light on cotton in Chaves County. Lygus bugs are being found on cotton in Chaves County.

Grasshoppers still plague ranch lands and are becoming more and more numerous on cultivated crops. Approximately 750,000 acres are infested in Lea County.

Weevils, Borers in Virginia Report

BLACKSBURG, VA.—Damage to corn from the European corn borers is general throughout Virginia. Borer damage ranges from light to heavy depending on the size of the corn during the last egg-laying period of the adult moths.

Corn is also being attacked in all areas by corn earworms, variously called budworms and shatterworms.

Alfalfa weevil larvae have been found in Shenandoah and Appomattox, two counties not previously reported as infected. However, damage to alfalfa by the weevil generally seems to have subsided for the summer.

Potato leaf hopper populations are increasing in alfalfa and potato fields.

The emergence of Japanese beetles is well under way, and heavy infestations are being reported. A particularly heavy infestation is reported in the city of Danville and at Ringgold. Grapes, roses and other ornamental plants, as well as corn, are being damaged.

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Calspray Building New Bio-Screening Lab at Richmond

RICHMOND, CAL. — Leo R. Gardner, manager of the Research and Development Department for the California Spray-Chemical Corp. of Richmond, Cal., has announced the construction of a new bio-screening laboratory in Richmond. The new lab is a part of the company's program for expanded research facilities and will be used to develop new, safer and more effective Ortho pesticides, Mr. Gardner said.

Present plans for the new laboratory call for the complete remodeling of an old building located at Standard of California's Richmond Refinery. When remodeled the building will house the controlled rooms for raising experimental insect and animal colonies as well as completely equipped laboratories for testing new materials on these insects and animals. A new greenhouse is being built adjacent to the building in which the plants necessary for testing new insecticides and fungicides will be grown.

The building in which the new lab will be housed was formerly used by the California Research and Development Corp., which worked there on projects for the Atomic Energy Commission before the entire operation was moved to Livermore, Cal.

Present plans call for the lab to be in operation about the end of July. It will be staffed by about 15 Calspray scientists.

W. C. Foster Resigns As President of MCA

WASHINGTON—William C. Foster has submitted his resignation as president and director of the Manufacturing Chemists' Assn., Inc., effective July 31. Mr. Foster, who became MCA's first full-time president two years ago after serving as deputy secretary of defense and in other government posts for about 12 years, had announced his intention to resign at the MCA annual meeting June 9.

Indiana Field Day

LAFAYETTE, IND.—Sand farmers in Indiana will view exhibits and hear the latest research results during the annual Sand Field Day at Purdue University's 40-acre Sand Experimental Farm near Culver July 19. A chalk talk on "Insect Problems in Northern Indiana" by Glen Lehker, extension entomologist at Purdue, will open the event.

Cotton Farmer Buys Major Interest in Southwest Fertilizer & Chemical Co.

EL PASO, TEXAS—A major interest in Southwest Fertilizer and Chemical Co. with headquarters in El Paso, Texas, has been purchased by K. B. Ivey, prominent El Paso cotton farmer.

The transaction involved the purchase by Mr. Ivey of the interests of the four Kerley brothers, Robert, B. J., Ralph and Donald, most of whom have been active in the company since its organization in 1947. Terms of the transaction were not stated.

Others who have an interest in the company include John and Paul Ivey, sons of K. B. Ivey. The company, with assets valued at approximately \$750,000, has branches in Odessa, Pecos, Clint and Lubbock in Texas and Anthony in New Mexico.

The firm manufactures commercial fertilizer at its plant in El Paso and formulates insecticides at



A. P. Gates

A. P. Gates Named to New V-C Position

RICHMOND, VA.—A. P. Gates has been named assistant to C. Cecil Arledge, vice president of Virginia-Carolina Chemical Corp., the firm has announced. Mr. Gates will succeed E. Y. Bass who retired June 30 after 45 years' service with V-C.

A native Virginian, Mr. Gates was graduated from the University of Richmond and received his master's degree from Harvard School of Business Administration. He served four years with the U.S. Army and was discharged a captain. He joined V-C in 1950 and in 1952 was made an assistant sales manager, general sales department, Richmond, Va.

At the same time, Mr. Arledge announced that R. Andrew Jenkins has



R. Andrew Jenkins

been appointed manager of V-C's Baltimore sales office. Mr. Jenkins will succeed H. A. Vernay who retired June 30 after 46 years as a V-C employee.

Other sales personnel changes effective July 1 include the transfer of Robert G. Kreiling, Jr., from the Savannah, Ga., sales office to the general sales department, Richmond, and the promotion of three men from assistant to manager to the position of assistant manager. They are J. S. Crosby, of the Baltimore sales office, G. F. Flenniken of the East St. Louis, Ill., sales office, and A. T. Montgomery of the Birmingham, Ala., sales office.

James H. Jensen Joins American Potash

LOS ANGELES—James H. Jensen has joined American Potash & Chemical Corp. as an advisory engineer at the company's main plant at Trona, Cal., according to an announcement by Parker S. Dunn, vice president in charge of production.

Prior to going with American Potash & Chemical Corp., Mr. Jensen was associated with the Ralph M. Parsons Co., of Los Angeles. Previously he had been with Pacific Carbide and Alloys and Great Lakes Carbon Corp.

KANSAS FIELD DAY
MANHATTAN, KANSAS — Kansas State College's annual horticultural field day will be held Aug. 17.

Norman A. Shepard, American Cyanamid Chemical Head, Retires

NEW YORK — Dr. Norman A. Shepard has retired from his post as chemical director of American Cyanamid Co., according to an announcement from the company. During his 42 year career in the chemical industry he became widely known in industrial, governmental and academic circles.

He began his career in 1913 as an instructor in chemistry at Yale University, became assistant professor four years later, and in 1919 joined Firestone Tire & Rubber Co. as director of organic chemical research. In 1925 he was named director of chemical research.

Dr. Shepard joined Cyanamid in 1936 as director of technical service and was named to his most recent post in 1941.

During his Cyanamid career, Dr. Shepard has served on numerous scientific and technical bodies of the government, universities and industrial associations. He is serving the Department of Defense as a member of the materials panel in the office of the assistant secretary of research and development; he is director and assistant treasurer of the Council for Agricultural and Chemurgic Research, and a member of its Research Committee; a member of the Advisory Committee on Chemicals for the director of the Bureau of Standards; a member of the Advisory Committee on Plastics of Princeton University's School of Engineering; a member of the Engineering Manpower Commission of Engineers Joint Council; a member of the Manpower Committees of the American Chemical Society and the American Institute of Chemists; a trustee of the Dorr Foundation and chairman of the board of the Dorr Company Educational Trust.

Dr. Shepard was graduated from Yale University in 1913. He and his wife make their home in Stamford, Conn.

Dow Upgrades Two Offices; To Open New One in Buffalo

MIDLAND, MICH. — Elevation of the Dow Chemical Co.'s Minneapolis and Cincinnati field offices to full sales office rank and plans for opening a new sales office in Buffalo have been announced by Donald Williams, vice president and director of sales.

Mr. Williams also announced the advancement of Marion E. (Roy) Teller as manager of the Minneapolis office, Edward C. Earley as manager of the Cincinnati office and Eugene L. Martinez as manager of the Buffalo office, which is expected to operate this year.

Mr. Teller, with the company since 1943, has been supervisor of industrial chemical sales with the Chicago office since 1950, while Mr. Earley, who joined the company in 1937, has served as Chicago supervisor of agricultural chemicals sales for the past five years. Mr. Martinez, a Dow man for 10 years, has served most of that time as a general chemical salesman with the company's New York office.

The Minneapolis office, established in 1953 to serve chemical markets in Minnesota, the northern half of Wisconsin, and the Dakotas, was formerly a branch of the Chicago office. The Cincinnati office opened a year ago as a branch of the Cleveland office and services customers in southern Ohio, southeastern Indiana and sections of Kentucky and West Virginia.

The Buffalo office will handle the company's principal product categories, including industrial chemicals, plastics, magnesium and agricultural chemicals, as do the Minneapolis and Cincinnati offices.

Mr. Williams said that the changes are part of an over-all program to broaden sales activities for improved customer service and to decentralize administrative functions for increased efficiency in the field.

Other advancements include the following:

William F. Hardy, a Dow man since 1935 and supervisor of agricultural chemical sales with the Houston office for the past three years will replace Mr. Teller in the Chicago office post. Albert Weil, agricultural chemicals salesman with the St. Louis office since he came to Dow in 1946, will take Mr. Hardy's place in the Houston office.

William L. Corbin will move up to succeed Mr. Earley in the Cincinnati office. He has been an agricultural chemicals salesman with the New York office since 1948, having joined the company the year previous.

Dr. Charles P. Lounsbury Dies in South Africa

BOSTON — Dr. Charles Pugsley Lounsbury, 82, who was graduated from Massachusetts Agricultural College in 1884, died at his home in Pretoria, Union of South Africa June 7, according to word received here. He was for many years chief of the Entomology Division of the Department of Agriculture, South Africa.

Dr. Lounsbury conducted original research in the control of insects injurious to plants and animals, and at one time was president of the South African Association for the Advancement of Science. He was trustee of the Imperial Bureau of Entomology in London.

WHITE PINE APHIDS

BURLINGTON, VT. — Early attacks by the pine leaf aphid are damaging white pine stands in Vermont. Dr. William Adams, forester at the Vermont Agricultural Experiment Station, reports that eggs are ready hatched and the larvae have crawled to the new shoots of the pine branches.

Corn Belt Anhydrous Conference to Be Held in Illinois

URBANA, ILL. — M. R. Russell, head of the University of Illinois department of agronomy, has announced that the Corn Belt Anhydrous Ammonia Conference will be held Sept. 7 and 8 on the Champaign-Urbana campus. More than 500 farmers, dealers, equipment distributors and soil scientists from five Corn Belt states are expected to attend.

The conference will emphasize the use of anhydrous ammonia in a complete fertilization program and the potential for increasing grain and pasture yields on midwest farms. The two-day event will feature reviews and reports by leading agronomists on experimental work with the fertilizer as well as recommendations for application on different crops under varying conditions. There also will be field demonstrations of different application methods and machines.

Those who plan to attend the conference are asked to register in advance by sending a card or letter to Room 216 Davenport Hall, Urbana, Ill.

Donald L. Miller Named Editor of NAC News Service

WASHINGTON—Donald L. Miller, Washington newspaper and magazine writer, has been named editor of National Agricultural Chemicals Association News Service. He replaces Scott Runkle, who has become director of public relations for the Commonwealth of Puerto Rico.

Mr. Miller, a native of Pittsburgh, Pa., graduated from Kenyon College, Gambier, Ohio, magna cum laude in 1940, and since has served on newspapers in Pittsburgh and Washington, D.C. From 1947 to 1951 he was in the public relations staff of the Westinghouse Electric Corp. More recently he has been writing on Washington affairs for several national trade magazines.

Mr. Miller was in the Navy during World War II and the Korean War, rising to the rank of lieutenant commander. In addition to his duties as editor of the NAC News, he will be concerned with the Association information services.

Number of Registered Fertilizer Firms Shows Increase in California

SAN FRANCISCO—A total of 513 firms was registered in California to sell commercial chemical fertilizers and agricultural minerals for the fiscal year 1953-1954, and these companies distributed 1,689 different brands and brand names of fertilizers and minerals.

The Bureau of Chemistry of the California State Department of Agriculture shows an increase of 55 firms in the fiscal year over the previous fiscal year, and of 180 fertilizer and mineral brands.

Of the 513 firms, 305 were registered to sell commercial fertilizers, 80 to sell minerals, and 28 to sell auxiliary plant chemicals, in each case a record number. There was an increase from 329 to 356 in the number of commercial fertilizer brands between the last two fiscal years, from 477 to 613 in fertilizer brand names, from 592 to 595 in agricultural minerals, and from 111 to 125 in auxiliary plant chemicals.

The number of licensed fertilizer salesmen increased from 2,493 during the fiscal year of 1952-53 to 2,582 during the succeeding fiscal year.

Beet Growers Using New Method to Determine Fertilizer Need

SACRAMENTO—Nine Sacramento River delta sugar beet growers controlling 1,400 acres of rich land are experimenting this season with a new means of determining fertilization needs.

They are forwarding samples of their growing plants to the Morse Laboratories here where the stalks or petioles are analyzed for nitrogen and phosphate content to learn the needs of the growing crop.

Through this analysis it is learned whether fertilization is needed, and growers can act to supply the need.

Leaf petiole analysis has been the subject of research by the University of California for a number of years. A leader in this field is Albert Ulrich, plant physiologist at the University's Berkeley Campus. Jack Hills and David Ririe, both of

the Davis Campus, also have done some work in this respect.

In gathering petioles, the collector walks crosswise of the rows in each quarter of the field, taking about 30 medium grown stalks from each quarter. In the laboratory, the petioles are sliced into one-eighth to one-fourth inch pieces, placed in an oven and dried. Then the residue is analyzed and a report sent to the grower.

The agricultural extension service says if the tests show the nitrogen is close to 1,000 parts per 1,000,000 and harvest still is many weeks away, fertilizer should be added to keep the beet growing.


If the analysis is made only eight to ten weeks before digging, the nitrogen content should be going down so that at least four weeks before harvest it will reach the critical level in order to use up the nitrogen and put more sugar into the beets.

Leslie R. Hamilton New Coordinator of Fertilizer Operations for Calspray

RICHMOND, CAL.—C. E. Cody, western regional manager of the California Spray-Chemical Corp. in Richmond, Cal. has named Leslie R. Hamilton to be coordinator of fertilizer operations for the company.

Mr. Hamilton will coordinate marketing activities in connection with production by the recently announced 16-million dollar fertilizer plant which is being built in Richmond.

Before assuming his new duties, Mr. Hamilton served as a supervisor of fertilizer sales for Calspray and has worked out of the company's Lindsay, Cal. branch in this capacity for the past two years. Before that, he worked as operations manager with the Mid-State Chemical Supply Co.



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WORLD REPORT

By **GEORGE E. SWARBRECK**
Croplife Canadian and Overseas Editor

Some knowledge of the life cycle and habits of crop-destroying insects can be a useful guide to growers when they are making a decision concerning what insecticides they should use to insure efficient control.

There are about 80,000 species of insects in North America, according to George Blais, a Canadian expert, and they can be divided into two general classes. There are chewing insects which destroy plants by tearing and chewing at the tissues, and sucking insects which pierce through plant tissues and suck out the juices in the same way as a mosquito sucks

the blood out of a human being.

Bugs like the Colorado potato beetle are chewing insects and are, therefore, best controlled by using insecticides which can be sprayed or dusted on the plants. The insect takes the poison into its stomach while feeding and is invariably killed, Mr. Blais explains.

Stomach poisons, however, are of little use against sucking insects which siphon their food from inside the plant below the level of the insecticide sprayed on the leaves. An aphid is an example of such insects and these are best controlled by

spraying with an insecticide which kills by direct contact with the body.

The eating habits of maggots which get inside roots and stems have both chewing and sucking characteristics and these have to be controlled by special chemicals. The agricultural chemical industry has met the problem by introducing an all-purpose spray and dust which can control both sucking and chewing insects as well as plant diseases with one treatment.

Could insects take over the earth? Mr. Blais, in answer, points out that the descendants of one female cabbage aphid, each season, number 1,560,000,000,000,000,000,000.

Production Advance

Portuguese producers of sulfate of ammonia are pressing on with plans to increase their output, in view of the urgent needs of agriculture. In 1953, the two major producers had an offtake of 34,000 tons but last year they increased this figure to 58,000 tons. The chances are that the 1955

figure will be even higher though the acute shortage of electrical power still prevents full advantage being taken of existing facilities.

Portugal is not alone in extending the use of fertilizers. The neighboring country of Spain, benefiting from the stimulus of U.S. aid, is stressing improved fertilizer use as part of the program to hike the country's agricultural production.

Cost of Pests

Canadian authorities have been assessing the cost of weeds, insects and other pests that cut back agricultural production.

Weeds alone, it is said, take \$400 million yearly toll from Canadian farm income while plant diseases drain off another \$135 million. The annual take from the farmer's cash box by insects is estimated at \$200 million.

These figures are being used to drive home to farmers the need to take evading action. Entomologists say that if all Canadian farmers took adequate steps to provide chemical protection for their crops as recommended by agricultural scientists, and by their retail suppliers, they could add well over \$500 million to the collective income every year.

Norwegian Plant

Norsk Hydro, the Norwegian fertilizer firm, started up production at a new plant at Glomfjord July 1. With an annual capacity of 100,000 tons of complete fertilizer, in addition to around 35,000 tons of nitrate of lime the plant will take up the entire output of the latest additions to the adjacent ammonia plant.

Present indications are that the extra supplies now available will go a long way towards meeting the complete demand for fertilizers by Norwegian agriculturists.

The Norwegian firm is building a new formic acid plant at Heroy in southern Norway. The annual output is estimated at 2,000 tons. Use for ensiling green fodder, existing requirements have to be imported at the new plant, therefore, will cut into the overseas demand for formic acid.

Norsk Hydro produces 210,000 tons of pure nitrogen every year. About 75% of its fertilizer production is sold abroad.

Indian Development

The lignite area of Neiveli in the South Arcot district, near Madras, India, has been suggested as a possible site for a new fertilizer factory. The idea has been put forward by the Fertilizer Inquiry Committee, a government appointed body.

In its report, the committee is understood to be urging the authorities to establish a unit designed to produce 46,000 tons urea and 200,000 tons double salt yearly. The site is looked upon as suitable because of the availability of raw materials. However, the committee has suggested Vijayawada as an alternative in the event of its first proposal being turned down.

MORE PRODUCTION

ROCHESTER, MINN.—By proper soil management, fertilizing and other improved practices, Minnesota farmers can boost over-all production 30 to 40% above present levels and still keep soil healthy and productive. This statement came recently from William P. Martin, head of the University of Minnesota's soil department, who spoke here at the annual banquet of the Minnesota Association of Soil Conservation District Supervisors. He said Minnesota farmers could profitably use a million and a half tons of fertilizer about ten times as much as now in increasing crop yields and building the soil for the future.

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QUALITY COUNTS

Brand, Not Price, Key to Sales For Pennsylvania Retailer

Tobacco farming plays a very important part in the economic life of Lancaster, Pa., for on a good crop depends the income of a heavy part of the population. Foremost in the growth of this crop are the Amish people. Although they may own upwards of 50 acres of land, they will devote their efforts to five or six acres of tobacco raising, because it is a very profitable crop and one that is always marketable.

"Although the plainfolk are penny-wise, it doesn't go to extremes," explains Irvin Ressler, who manages the S. R. Snader Feed and Fertilizer Store, Mt. Airy, Pa. "They will spend money on good fertilizer and equipment to enjoy a good crop. They know that this expense will return them multiple profits. So fertilizers get a big play from us."

S. R. Snader stocks two nationally advertised brands of fertilizers. Both have been used by farmers in the area for years and Mr. Ressler knows that the only way to sell these customers is to handle something that is nationally known and has been successfully used in the area.

"This area has many dealers and some try to outdo the others by offering price instead of brand to these farmers," says Mr. Ressler. "This is the wrong approach. When farmers forego 40 acres of cultivation for five or six, they are out to get the most from it, and price or not, they aren't going to use little known or untested fertilizers on their crops. So we feature brand to the customer and let the price situation take care of itself."

Credit is one of Mr. Ressler's strongest sales points in selling large quantities of fertilizer to his customers. The tobacco crop is sold on an

average of twice annually and many farmers require credit to carry them over. Mr. Ressler surveys the farmer's crop, checks on the tobacco market and its prices and is then in a position to know if credit can be extended for this duration.

"We are able to carry over credit on fertilizer for lengthy periods because we sell the same customer feeds for his poultry flocks, livestock and other cattle," says Mr. Ressler. "We allow a 30-day credit on feed, but mainly it is cash. So carrying fertilizer isn't too heavy a drain on our financial resources. And because they are getting fertilizer on credit, we keep getting their feed business."

Liquid nitrogen has been slowly adopted in this region. As mentioned before, the residents are careful about what they buy and the results. But they are informed and an increasing interest in liquid nitrogen is being taken. At the present time, they are limiting its use to lawns, vegetable gardens and flower beds.

Mr. Ressler is promoting the introduction of liquid nitrogen in the region by using it on farmed areas around the store location. Farmers coming to the store notice the growth of his crops "outside" and Mr. Ressler says that it is due to the fertilizer he uses. Then he shows the customer the drums of liquid nitrogen stocked and starts getting them interested.

"You can't use salesmanship on these folks," says Mr. Ressler, "they have to sell themselves. All you can do is show them the results and let them become interested. Pressure selling is out in this Amish country region. That's why we have the small gardens around the building. And once the customer buys liquid fertilizer we keep reminding him of it when he orders his usual dry fertilizer and feeds. It may take us many months, but I am sure we will build up a big liquid nitrogen business here."

The C. R. Snader store is a meeting place and headquarters for farmers in the vicinity. A fire-place and vending machine is reminiscent of the old time cracker barrel and pot bellied stove. Farmers stick around the store closely during non-planting season swapping tales and discussing business. They also make use of a bulletin board in the store for noting merchandise they want to buy, sell or swap.

"We have to maintain year around contact with our customers if we are to sell them when planting time comes," explains Mr. Ressler. "And while they visit with us, they may pick up some of the many related lines that we carry, such as paint, hardware, garden and lawn equipment or poultry raising necessities. Good-will can not be too overly stressed when doing business with these people."

RECOMMENDED RATIOS

ITHACA, N.Y.—Last year, 84% of the mixed fertilizer purchased in New York state was made up of ratios recommended by the state college of agriculture.



SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

This is the time of year when the fertilizer dealer begins to wonder about how farmers who got their supplies on credit will make out with their crops. He may worry—along with the farmer—about heat waves, prolonged dry spells, storms and too much rain and what they'll do to the crops.

Naturally a good crop—together with a fair market price—means that the dealer is more likely to get his money back at the end of the crop year. A poor crop means trouble for the dealer who has been too lenient in granting credit.

Those dealers who have formal "agreements" will perhaps be better off than those who simply have money "on the books."

Buying on time, or letting bills accumulate unpaid on a dealer's books, is a liability just as surely as if the customer went to his local banker for a loan to cover his fertilizer purchases. Dealers ought not to forget that fact.

Dealers will also find that the customer who has scattered debts accumulating has let credit get out of hand. Often the borrower may not fully realize the extent of such obligations. The dealer should investigate such credit applicants so as to not be caught with a "bad" debt.

Such a customer should be informed that he would be better to concentrate his debts with one lending agency for better control. A farm operator who deals with one lender finds that the lender becomes much more familiar with his particular situation and ability to pay and gets better credit service, better control of debts and lower credit costs. Further, such a lender is more apt to "go along" with a borrower he knows when an emergency arises.

Dealers are aware that a successful farm operator can no more operate without credit today than he can farm without adequate machinery. It is as necessary for the farmer to know how to use borrowed money as it is to know how to use fertilizer.

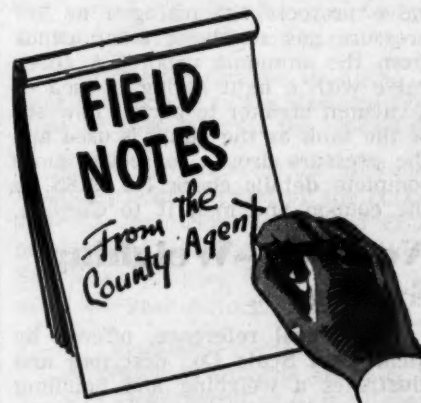
Years ago a farmer was almost self sufficient. He raised his own seed, feeder and breeding livestock and used horses for power. He found little use for credit except for buying his farm.

Modern agricultural technology has changed all that. The farmer now has a much larger investment in equipment. He often buys his feeder and breeding stock. He buys seed. Years of use have depleted soil nutrients and it is necessary to replace them with fertilizer. Frequently, the farmer finds himself short of working capital. Credit has its role here because with borrowed capital he can increase his volume of income.

Credit Is No Cure-All

The dealer who has carefully picked his credit applicants has reason to feel pretty smug about his position. He won't have much to worry about at the end of the crop this crop year. The borrower who has proved his financial position, proven skill as a farm manager, keeps accurate farm

(Continued on page 15)



By RAYMOND ROSSON

Washington County, Tenn., County Agent

'Tis open season for picnics. July is just about the best month in the summer for that "looked-for" picnic. Business people take vacations. Why not farmers and farm home makers? If farmers wait until they have "caught up" with everything, picnic time will never come.

Why don't you dealers kind of "spark plug" the idea of a picnic for your customers and you take off with them. It will do you good and it will do the old store and farm good, and it won't hurt your business one bit. You might ask your farmer customers, "Why don't you fellows take a vacation?"

"There is nearly always a little lull in farm work, after the hay is in the mow and the wheat in the bin, and before tobacco is ready to harvest or the cotton ready to pick. Surprise that good wife by telling her how well she has done her part (and more) and that you are now ready for another honeymoon.

"If you live on level land, visit the mountains or the shore, and if you live in the hills, visit the low countries, and if you don't think you live in a swell community and in an area considered tops, just get in the old gas buggy and go most any direction for 500 miles, then return, and we'll wager, 'Home has never looked so good and the community so receptive.'

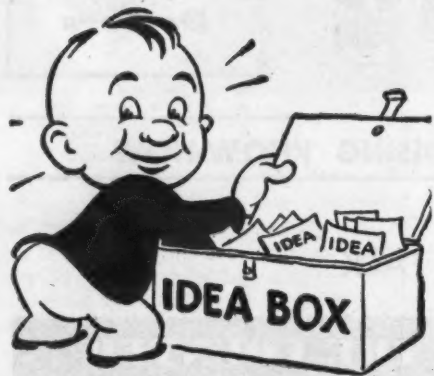
"Of course the children won't want to go, but take them along anyway. They are deserving and traveling is educational. You'll have a chance to pal a bit with that son or daughter. You need it. What a grand and glorious feeling, after being away for a while, on returning and in sight of your home, you can say, 'This is the best place in all the world to us.'"



LISTING WANT AD—Above is a common scene at the S. R. Snader Feed & Fertilizer Store, Mt. Airy, Pa., as a customer lists a "want ad" on the store's bulletin board.

Better Selling

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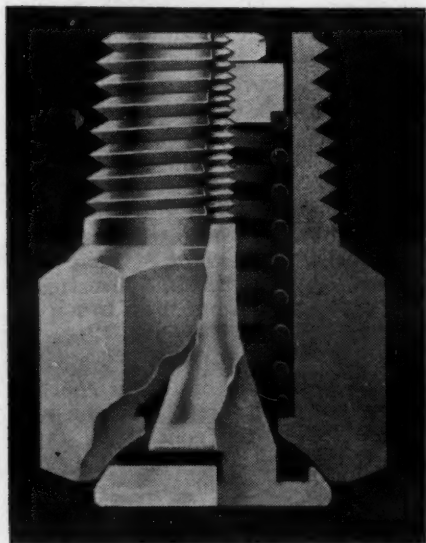
What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6165—Check, Relief Valves

Details of how check and relief valves are used in Brea Chemical Corporation's distribution tanks for handling nitrogen solutions have been announced. The valves are trade named Circle Seal Precision valves by James-Pond-Clark. The Circle



Seal announcement states that "Nitrogen or low pressure gas is used to 'pad' or pressurize the tanks to prevent boiling off of ammonia vapor and permit application under pressure. The relief valves protect the tanks from over pressure caused by increased vapor pressure where the tanks are in the sun. . . . The check valve protects the nitrogen or low pressure gas regulator from attack from the ammonia vapor." A check valve with a light spring is used as a vacuum breaker to permit flow out of the tank as the liquid is used and the pressure drops. To secure more complete details check No. 6165 on the coupon and mail it to Croplife.

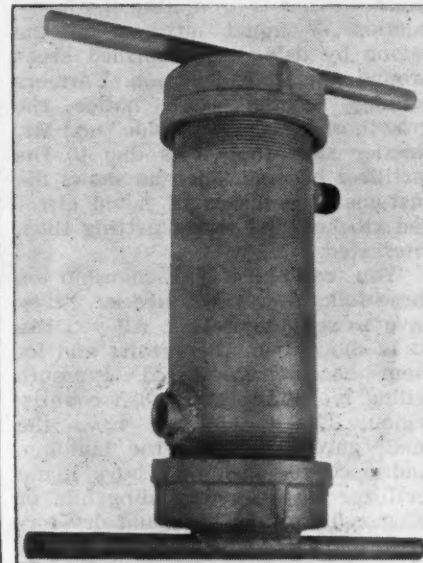
No. 5200—Weighing System

A technical reference, offered by Richardson Scale Co., describes and illustrates a weighing and handling system which utilizes a line of batch hoppers suspended from an elevated monorail. Under the remote control of one operator, the hoppers are automatically tare weighed, filled with multiple ingredients, net weighed and conveyed to a delivery point for discharge. The reference outlines the

complete sequence of operation for the weighing, indicating and delivery cycles. One section, discussing control features, covers such things as pilot light indicators, weigh selector dials and the system's servo mechanism. Information on the automatic recording of tare, gross and net weights is also included. To secure the reference check No. 5200 on the coupon and mail it to this publication.

No. 6166—Spray Rig Filter

The Central Mine Supply Co. has designed and is manufacturing its new spray rig filter. Company spokesmen said that it is "designed for easy



cleaning, with a sediment bowl in its base . . . and uses an easy-to-replace sock type filter element." Prospective users and dealers may have more complete information without charge. Check No. 6166 on the coupon and mail it to Croplife.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

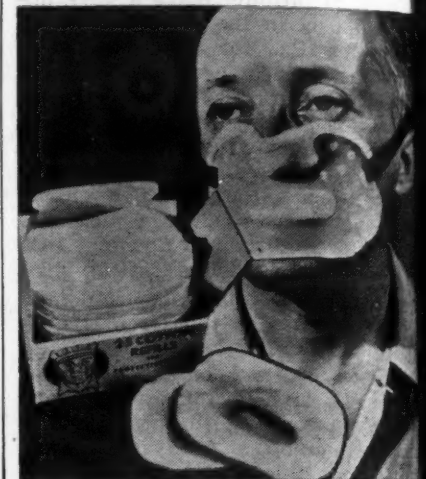
No. 6270—Nitrogen

New literature has been prepared by the Grand River Chemical Division of Deere & Co. on its new product, Vitrea. The literature describes the product as being composed of "45% nitrogen fertilizer from urea." Prilled into a bead-like shape, the product is called "non-caking" and "free flowing." One folder contains recommendations for its use on rice with sections devoted to its use in Texas,

Arkansas, Louisiana and California. Another folder has recommendations for its use on corn, sorghums, small grains, pastures, grass crops, cotton and sugar beets, the number of pounds to apply and common methods of application. Secure the literature by checking No. 6270 on the coupon and mailing it to Croplife.

No. 6163—Mask, Dust Filter

A light protective mask which weighs less than 1/2 oz. has been announced by the General Scientific Equipment Co. Made of soft rolled



aluminum, it is said to be so pliable that it fits any shape face. It is recommended for protection against ordinary non-toxic dusts and spray hazards and may be worn with goggles. No metal touches the skin. Filter discoloration, caused by dust, is indicated in the picture. For more complete details check No. 6163 on the coupon and mail it to this publication.

No. 6257—Chemicals Handling

A booklet entitled, "Materials, Machines & Motions" has been compiled by Sauerman Bros., Inc. The information in the booklet relates to handling of chemicals. It describes in words and pictures the company's machinery in use by such firms as International Minerals & Chemical Corp., Duval Sulphur & Potash Co., Lion Oil Co. and Davison Chemical Company Division of W. R. Grace & Co. Methods of handling phosphate, ammonia and potash are described. To secure the 24-page booklet check No. 6257 on the coupon and mail it to Croplife.

No. 6261—Ant Powder

A consumer package of ant powder containing dieldrin has been announced by J. T. Eaton & Co., Inc. The package, which is a circular hand-squeeze applicator, weighs 3 oz. and its trade name is Rough and Ready ant powder. To secure more details about this product check No. 6261 on the coupon and mail it to Croplife.

No. 6259—Nitrogen Solution Pump

The John Blue Co. has recently announced production of its new nitrogen solution pump, model "NSF". This pump is fully enclosed and has approximately 2 1/2 times the output of the "NSC" which it supersedes. The pump is ground driven and, when mounted on one of the Blue trailer type rigs (such as the Nitro-Shooter series "20-NS") up to 75 gal. of solution per acre may be applied when fertilizing four 40-in. rows, the company announcement states. The pump is designed for use with both non-pressure and pressure solutions (including aqua ammonia). All working parts operate in a bath of oil inside

Send me information on the items marked:

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| <input type="checkbox"/> No. 5200—Weighing System | <input type="checkbox"/> No. 6258—Bulk Scale |
| <input type="checkbox"/> No. 5210—Bag Poster | <input type="checkbox"/> No. 6259—Pump |
| <input type="checkbox"/> No. 6163—Dust Filter | <input type="checkbox"/> No. 6261—Ant Powder |
| <input type="checkbox"/> No. 6165—Valves | <input type="checkbox"/> No. 6162—Sprayer |
| <input type="checkbox"/> No. 6166—Spray Rig Filter | <input type="checkbox"/> No. 6169—Seed Treatment |
| <input type="checkbox"/> No. 6256—Pump Bulletin | <input type="checkbox"/> No. 6270—Nitrogen |
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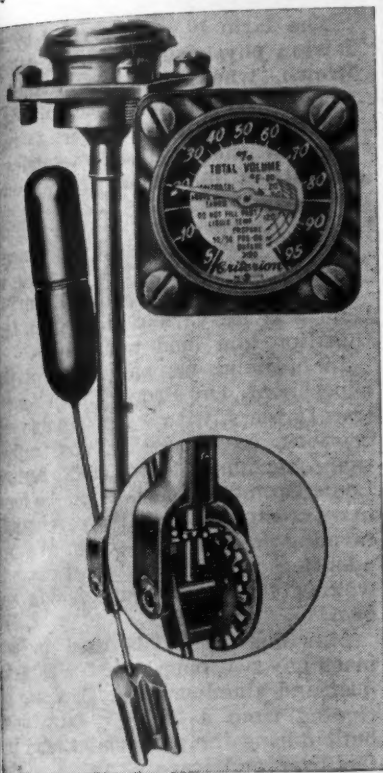
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inclosed, dust tight crankcase. A double lip seal" protects the crankshaft from solution and prevents contamination of oil, it is claimed. The pumping end is constructed of non-corrosive materials such as stainless steel and aluminum. To secure more complete details check No. 6259 on the coupon and mail it to Croplife.

No. 6273—Liquid Level Gauge

A new magnetic liquid level gauge designed for use in anhydrous ammonia or LP gas storage, mobile and applicator tanks has been introduced by the Rochester Manufacturing Co.



Called the Criterion, it features a new headplate design, tested to withstand 1,200 lb./sq. in. pressure and new shrouded gear assembly which transmits float arm movement to the dial, according to the manufacturer. For more details check No. 6273 on the coupon and drop it in the mail.

No. 6169—Seed Treatment

A new six-page folder on how to treat seed with Heptachlor has been published by the Velsicol Corp. The folder, which is free upon request, demonstrates how Heptachlor is used, when to treat seed, how to treat seed, and points out special advantages of Heptachlor for seed treatment. A table shows the rates of application for standard Heptachlor formulations for wireworms, seed corn maggots, southern corn rootworm and sugar beet root maggots. According to the information in the folder, the product insures protection of cucumber seeds, corn, beans, oats, wheat, onions, sugar beets and other seeds. The folder is available by checking No. 6169 on the coupon and dropping it in the mail.

No. 6256—Irrigation Pump Bulletin

A new bulletin describing its line of pumps for irrigation service is available from the Deming Co. The bulletin describes deep well turbines, end section centrifugals, portable centrifugals, and portable self-priming centrifugal pumps with capacities up to 3,500 gal. per minute. Most models are available skid mounted or on rubber tired mounts equipped with gasoline engine. The bulletin gives tables for determining: The amount of water needed; how often to irrigate; when to irrigate and rate of application; friction loss of water in pipe; and equations required for determining other factors related to proper pump use and selection. Se-

cure the bulletin by checking No. 6256 on the coupon and dropping it in the mail.

No. 6162—Sprayer

A heavy-duty sprayer, called by the trade name, Hy-Row sprayer, has been developed by the O. W. Kromer Co. The sprayer features a 25 h.p. driving engine and is said to be suitable for cotton and tobacco spraying, as well as corn borer control and all types of custom spraying. It has a heavy-duty low-speed tractor transmission which allows continuous operation in all speeds. The clutch is a Rockford disc oil clutch. The tank and booms are claimed to be resistant to corrosion and rust from all spray chemicals and concentrated fertilizers. The tank has a 225-gal. capacity. Booms are raised and lowered automatically by a hydraulic pump. A 3.6 h.p. auxiliary engine provides mechanical agitation and drives the 2-cylinder piston pump, which produces 9 gal. per minute at 400 lb. pressure. To secure more complete information check No. 6162 on the coupon and drop it in the mail.

No. 5210—Bag Handling Poster

A poster designed to curb careless handling of multiwall paper bags has been prepared by the Fulton Bag & Cotton Mills. The poster, printed in red and black, is designed for use on bulletin boards and in other plant areas. Cartoon technique is used in the illustrations and the text is brief and to-the-point. The poster may be obtained by checking No. 5210 on the coupon and mailing it to this newspaper.

No. 6258—Bulk Scale

Recently the Burrows Equipment Co. built a special 1-ton capacity Eze Move bulk scale for Turner Seed & Supply Co., Villa Grove, Ill. This picture taken at the factory prior to making shipment shows the capacity



of the equipment. The scale will be used for receiving, handling, weighing bulk phosphate, super and rock, potash, sulphates and various forms of nitrate by Turner. The unit combines a large size platform scale with a stainless steel hopper. To secure more details about this scale check No. 6258 on the coupon and mail it to Croplife.

No. 6274—Soil Test

Iowa State College's film production unit has produced a 22-minute film entitled "Soil Test." Produced under supervision of the college's agronomy department, the film is available for rent or purchase for \$190 a copy. For rental information a regular film library or the Visual Instruction Service, Iowa State College, Ames, may be contacted. Preview prints are available for those interested in purchasing the film. The only charge for the preview film is for insurance and return postage. For purchase information write: Print Sales Manager, Film Production Unit, Alice Norton House, Iowa State College, Ames.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Thunderbird Chemicals, Inc., announced plans for construction of a \$13 million anhydrous ammonia plant near Kyrene, Ariz. President of the new firm is Fred Shanaman, also president of Pennsylvania Salt Mfg. Co., of Washington. A plant site of 122½ acres has been procured.

The Pacific Branch of ESA was told that only a small number of petitions for tolerances required under the Miller amendment, have been received by the Food and Drug Administration. Attendance at the meeting, over 400, broke previous records. . . . A new insecticide plant at San Antonio de Belen, Costa Rica, began production of various formulations to be marketed in Central America. C. J. Fredrickson was named chief operating executive of plant.

A series of revised index numbers of prices of fertilizer materials for the years 1910 to 1954 was published by the University of Maryland Agricultural Experiment Station's department of agricultural economics and marketing. The changes were made to "provide a more realistic picture of the comparative prices of fertilizer materials (some of which) no longer represent a significant quantity relative to the total of all fertilizer materials," according to Paul R. Poffenberger, University of Maryland.

The U.S. Department of Agriculture issued its national bulletin outlining disbursement of some \$250 million in the 1956 agricultural conservation program. There are no major changes in the program. . . . The Department of Health, Education & Welfare outlined the conditions under which it will extend the effective date for the new Miller Law to apply to pesticides on a product-by-product basis.

Fertilizer consumption during 1954 totaled 20,508,000 tons, for a new record, according to the National Plant Food Institute. A NPFI survey shows, however, that sales for the 1954-55 fiscal year may be down as much as 4%.

About 900 attended the preliminary meeting of the National Plant Food Institute, being formed by the consolidation of the National Fertilizer Assn. and the American Plant Food Council. . . . W. E. Shelburne was named president of Armour Fertilizer Works. . . . New president of Pennsylvania Salt Manufacturing Co. is William P. Drake, 42, youngest president in Pennsylvania's 105-year history.

Prospects are that the U.S. may produce over four million tons of synthetic nitrogen annually by Jan. 1, 1957, it was confirmed by U.S. Department of Agriculture officials. . . . Production of pesticides in the U.S. for the first three months of 1955 showed increases ranging up to 100%. . . . The high value of controlling cotton insects with chemical insecticides has been clearly demonstrated throughout 16 years of experiments at Waco, Texas, the USDA reports.

A survey taken by Virginia's state chemist, Rodney C. Berry, indicated that more states are permitting the sale and distribution of fertilizer-pesticide mixtures than were so numbered in a similar survey taken in 1954. Six more states reported that mixtures were being sold within their borders than were noted in last year's questionnaire.

Gypsy moth and budworm spraying projects were being undertaken in Maine and New Mexico. More than a half million acres of timber was set for treatment and about that many pounds of DDT were to be used. . . . USDA announced promising results from two new systemic insecticides for control of cotton pests. . . . John E. Sanford, president of Armour Fertilizer Co., Atlanta, Ga., retired after a career of 45 years in the fertilizer business.

John F. Gale, economist and editor for the National Fertilizer Assn., Washington, D.C., joined the staff of Garden Foundation, Inc., Baltimore, Md. . . . Dr. Edward L. Chandler was appointed to the technical staff of Diamond Alkali Company's Chlorinated Products Division, Cleveland. . . . The University Fertilizer Corp. was formed in Madison, Wis., with authorized capital stock of 1,250 shares, no par value.

Davison Chemical Co., Division of W. R. Grace Co., announced that a new professorship has been established at the Johns Hopkins University, Baltimore, to be known as "The Grace Chair of Chemistry." The position will be filled by Dr. Paul H. Emmett of the Mellon Institute of Industrial Research, Pittsburgh.

Fertilizer consumption, tonnage-wise, was down 2.73% for the 1953-54 fertilizer year, according to the annual USDA report published in the May 30 issue of Croplife. However, consumption of plant nutrient materials was up 4.42% over last year's record level. The middle west continued to be the area of most increase in consumption in both actual tons used and percentage-wise.

Escambia Bay Petrochemical Co. broke ground in Florida for its new \$25 million plant. It will produce 250 tons anhydrous ammonia daily when completed next January. . . . The U.S. Forest Service sent out bid invitations for spray operations and chemicals to be used in a spruce budworm control project in Montana. Over 2 million acres are to be treated.

Robert Q. Parks was named general sales manager of Grace Chemical Co. He will continue to work out of Memphis, Tenn. . . . Glenn O. Middleton was appointed manager of the Dubuque, Ia., sales office of Virginia-Carolina Chemical Corp. C. Aubrey Clayton was made assistant manager of the Dubuque office.

The Radco fertilizer companies of southwestern Iowa merged with Chemical Enterprises, Inc., New York. . . . Charles E. Wilson was named chairman of the board of directors of W. R. Grace Co., marking the first time in 101 years that anyone other than a member of the Grace family has held this position.



A burly, tanned and sweaty fellow, wearing cloth cap, khaki shirt and pants, came into the farm supplies store of Schoenfeld & McGillicuddy that hot summer afternoon. He had a choice of accosting Oscar or Tillie, the bookkeeper, and he chose Oscar, even though the demeanor of the frugal partner was quite cold.

Oscar always viewed newcomers with suspicion; he always wondered if they were after his cash with some slick scheme; it never occurred to him to regard newcomers as bringing in cash to put into the till.

"Did them weed sprayin' pitchers come in yet?" asked the man anxiously.

"Weed pictures!" echoed Oscar. "I don't know anything about them."

"Well, Pat McGillicuddy does," said the man, wiping the sweat from his brow. "He took lots of pitchers the last two days of us spraying weeds. I'm Hugo White, and I work on one of the county trucks. We're sure givin' the weeds hell Columbia. I guess Pat's got pitchers of every darn operation we make, from fillin' our tanks to puttin' the sprayers away every night."

"So that's it!" Oscar exclaimed. "That's where he's been the last few days."

"Pat said he'd give each of us fellows some extra pitchers," Hugo White explained. "I sorta wanted a couple to send to my brother in Frisco. He works in a shipyard. I want a pitcher to show him how I wrestle those big county trucks."

"Oh, here comes Pat now," said Tillie Mason, the plumpish bookkeeper.

All eyes turned to see tall, bushy-haired and blue-eyed Pat McGillicuddy walk into the store. He had a package of developed pictures in his hand.

"Hi, Pat," grinned Hugo. "Got them pitchers yet?"

"You bet I have," Pat smiled. "Just picked them up at the drug store. I'll show them to you."

He opened his packet and spread out the 4 by 5 size pictures. There were many of them—in fact they

covered the top of Pat's desk. Hugo White bent over to look at the pictures, his eyes shining. "Gee, you got some good ones," he said. "The boys sure will be tickled about this. Mind if I take a couple?"

"No, go ahead," Pat invited. "I had some extras printed. I knew you fellows would want some."

Hugo White picked one picture, then another, then another—in fact, he started picking so many that frugal Oscar suddenly felt slightly sick at his stomach. He got up abruptly from his chair and went quickly into the warehouse, where he paced back and forth, hands interlaced behind his back, his lips moving wordlessly but nonetheless expressively.

Oscar came back into the office just as a grateful Hugo White was leaving. "Thanks for the pitchers, Pat, and I'll tell the rest of the boys you said they could come here and get some."

"Fine, Hugo," said Pat generously. "It was a dandy experience being with you fellows on that crew. I learned a lot."

Oscar waited until Hugo had gotten into his truck and driven off.

"Well," he said acidly. "Are we in the picture business now? And how much is it going to cost us?"

Pat's eyes had a surprised look. "Why this is a promotion idea, Oscar. These pictures will help us get more business."

"Huh," grunted Oscar. "What's the matter with just selling fertilizers and insecticides straight out, without a lot of hoopla? Why do we have to take expensive pictures to do it?"

Pat sat down at his desk, looked across the spread of black and white pictures and sighed. "Oscar," he said patiently. "It might interest you to know that I got quite a few orders for weed spraying materials from the county crew. While selling them, I got this picture taking idea. And I used my own camera, too. The firm just has to pay for the films and the prints."

"Why didn't you go home after you sold the weed spray?" suggested

Oscar acidly. "Why didn't you let well enough alone, instead of spending all the profits on the order? And why invite everybody in the county to come and get free pictures?"

Pat began to get angry, but remembering his wife's advice, counted to eight. "Oscar, you don't get the idea. This time of year county crews all over the nation are spraying for weeds. They buy and use a lot of material. When farmers see county crews spraying, they get the spraying idea, too, and do it. So, I took a series of pictures showing how a county crew does it, step by step."

"What good will that do?" asked hard headed Oscar.

"I'm going to post those pictures and typed explanations on the bulletin board. I'm going to state just what type of weeds they spray for, what chemicals they use, and then I'm going to make a mass display of weed chemicals and spray attachments right under that bulletin board."

"And the farmers are supposed to buy more, is that it?"

Pat nodded. "That bulletin board and pictures and the displayed products will give a unified display effect when farmers walk in here. They won't be able to ignore it. And I'll also take a picture of that display and put it in an ad in next week's paper." He smiled. "And, Oscar, county departments pay their bills on time. There is no collection problem there."

Oscar did not blink. "They do," he admitted, "but they also get a discount, which means we don't get as much profit as we should. And while they pay their bills on time, there are a lot of farmers we sell who act as though they never received the bills we sent them. We need somebody to go out and remind them that we expect pay for that fertilizer we sold them last spring. Or do we have to hire an extra man to do it while we take time to get pictures printed and give away to every Tom, Dick and Harry?"

Pat counted to eight again, as he picked up his pictures and stuffed them into an envelope. "Tillie," he said slowly. "Have the delinquent account list on my desk first thing in the morning. I'll have some calls to make."

Then he turned to Oscar. "When I collect enough to meet the payroll Saturday, then I'll take time to put up that weed bulletin board and display. And it will be mighty soon."

Birch Leaf Miner Hits Massachusetts

BOSTON—The birch leaf miner has been wreaking havoc on birch trees throughout the state, and in Worcester County, Ernest A. George, associate county agricultural agent, warned homeowners to take preventive action if they want to protect birches on their property from further damage. He emphasized the importance of spraying trees even if the leaves appear healthy. The best time he said would be mid-July when the eggs have just hatched.

Rehabilitation of 300-Year-Old Farm Under Way Soon

MARSHFIELD, MASS.—The most heavily fertilized and most carefully handled farming land in New England is the Peregrine White Farm here. Located on historic ground that was farmed centuries before most of the land in the rest of the nation, the acres of this land have been used since Peregrine White, first white child born in New England, settled on it in the early 1640's.

The farm is now operated by a Boston physician, Dr. Ethan Allen Brown, who, with two partners, Norman Nixon and Robert Melvin, are making a special effort to rejuvenate this land and experiment in getting maximum yields from its acres.

In preparation for their experiment, Nixon and Melvin spent a week at Louis Bromfield's "Malabar Farm" in Ohio studying various methods of fertilization and land reclamation.

In outlining his philosophy of the experiment, Dr. Brown said, "American farmers, with a few notable exceptions, have been 'mining' rather than 'farming' their land. Author Louis Bromfield seems to be the foremost exponent of truly scientific farming in the U.S. today. We are adopting most of his practices and we're going to try out a few of our own."

Mulching materials used include mash hay sweepings, wood chips, sawdust and aluminum foil. They are irrigated from a 2.7 acre farm pond built during the past winter, and the fertilizer and trace elements needed for best vegetative growth are applied to the leaves of growing plants along with the irrigation water.

"We depend a great deal more upon degree-days than the calendar in our planting schedules," Dr. Brown said. "A single case in point: tomatoes were put out at the hitherto unheard of early date of April 6. The ground in areas immediately surrounding the farm froze solid for an inch or so on the surface that night."

"But, our plants were unharmed," Mr. Nixon reported. "I think the reason was that we have so much humus in our soil now—and so much heat generating manure—that the frost was fended off."

Radioactivity Symposium Scheduled Oct. 19-21

BOSTON—Tracerlab, Inc. has announced that a "Symposium on Applications of Radioactivity in the Food and Food Processing Industries" will be held at the Sheraton Plaza Hotel here Oct. 19-21.

DUTCH ELM DISEASE

AMHERST, MASS.—Dutch elm disease has been recorded for the first time in eight more Massachusetts towns since January, making a total of 325 towns which have now been struck by the blight, according to Malcolm H. McKenzie, director of the Shade Tree Laboratories at the University of Massachusetts.

MOVING UP

CHICAGO — The fertilizer section of the National Safety Council has gained 20 new members during the period Nov. 1, 1954 through April 30, 1955. Only the commercial vehicle, public utilities and construction sections have topped this record.

Test Your FERTILIZER I. Q.

BY DR. MALCOLM H. McVICKAR
National Plant Food Institute

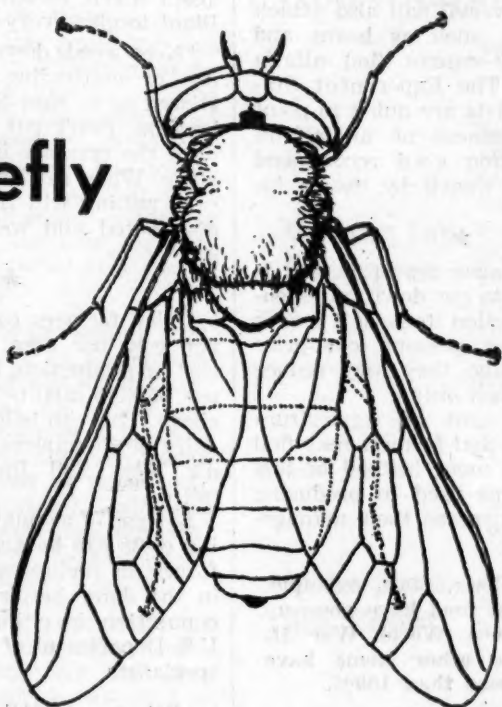
Q. What are the more common fertilizer materials supplying phosphoric acid?

A. Most of the fertilizer phosphoric acid is in the form of superphosphate. There are two kinds. Normal superphosphate contains 18% to 20% available phosphoric acid while concentrated superphosphate contains 40% to 50% available phosphoric acid. Both are made by treating phosphate rock with sulfuric acid. One hundred pounds normal superphosphate, in addition to the phosphoric acid, carries approximately 20 lb. calcium and 12 lb. sulfur in the form of gypsum. Concentrated superphosphate is like normal superphosphate, but since the gypsum is removed, it has a higher percentage of available phosphoric acid.

BUG OF THE WEEK

Mr. Dealer--Cut out this page for your bulletin board

Horsefly



How to Identify

Horseflies are usually quite large, which is their most obvious characteristic. There are several hundred species of horseflies in the U.S. The front wings are horny, rigid and opaque. They are without veins, meeting in a line over the middle of the body and concealing the membranous rear wings. On most species, front wings are usually membranous, although often covered with scales or hairs. Horseflies range in length from less than a half inch to a full inch.

Habits of Horseflies

Most of the horsefly species breed in moist places. Development from egg to adult may require only a few months or even as much as from one to two years, depending upon the species. In the maggot stage, the insect is a couple of inches long and in this form is pointed at each end. They spend the winter in this form, hibernating in the mud of rivers or lakes and even wet land areas. The flies begin to appear in early summer, soon lay their eggs on leaves of aquatic plants where the maggots may later fall into the water. Once in the water, the maggots sink to the bottom and burrow into the mud.

Damage Done by Horseflies

Although these insects will attack many types of warm blooded animals, they prefer horses and mules. They cause great annoyance to livestock, and, more seriously, are carriers of diseases. Equine infectious anemia, or swamp fever, is thought to be carried by horseflies, as indicated by the fact that this disease reaches its height in the summer and by the persistence of the virus in the blood of infected hosts. Horseflies suck blood from the animals and cause acute physical discomfort to the animals in the process. The flies attack only in the daytime. Although horses and mules are the target of the major portion of their attacks, the horsefly causes economic damage on other domestic animals as well.

Control of Horsefly

Complete satisfactory methods of control of the horsefly have not been developed as yet. A number of chemicals have proved effective to a considerable extent, however. DDT and methoxychlor, pyrethrum and piperonyl butoxide, toxaphene, chlordane, aldrin and BHC are among the toxicants named by various sources as being useful. Repellents have also been beneficial. These included 10% butoxy-polypropylene glycol 800 in deodorized kerosene, as well as pyrethrins and piperonyl butoxide.

Drawing of Horsefly furnished Crolife through courtesy of U.S. Department of Agriculture, Washington, D.C.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Crolife Reprint Dept., Box 67, Minneapolis 1, Minn.

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FARM SERVICE DATA

Extension Station Reports

Two viruses of cabbage discovered at the New York Experiment Station at Geneva may be spread by cabbage aphids. Both viruses are readily transmitted from infected to healthy plants, says Dr. John J. Natti, Cornell plant disease specialist at the station. But the viruses are not carried in the seed, he states.

The trouble, attributed to "virus A," a strain of turnip-mosaic virus, and "virus B," a strain of cauliflower-mosaic virus, was first seen in leaves of cabbage plants grown in the station greenhouse from "mother" plants selected in a breeding program. Cabbage seedlings inoculated with juice from these leaves developed virus symptoms. Broccoli, Brussels sprouts and cauliflower are also attacked by the viruses. When both viruses occur in the same plant, as often happens, symptoms are intensified.

The viruses cause a marked loss in yield, says Dr. Natti. Also, the earlier the infection occurs in the life of the plant, the greater the loss.

"When we infected plants in the seedbed and set them in the field, yields averaged four tons to the acre," he continues. "Similar plants free from infection at transplanting time but which became infected several weeks later produced eight tons to the acre. Plants which remained healthy or became infected late in the season gave 16 tons to the acre. These tests were made with 11 varieties of cabbage."

Eradication of wild mustard, yellow rocket, and other cruciferous weeds near cabbage seedbeds, isolation of breeding material held over winter for seed production, and control of insect carriers, especially aphids, are the most promising control measures now available, concludes Dr. Natti.

★

The alfalfa weevil, long a pest in the western alfalfa regions, has migrated eastward and is now becoming destructive to alfalfa in West Virginia. It was first discovered in Maryland in 1952, and now is reported in Delaware, New Jersey, Pennsylvania and Virginia.

Entomologists at the West Virginia University Agricultural Experiment Station have been studying the progress of the alfalfa weevil in the state. They have found heavy infestations in Jefferson County, and lesser populations in Berkeley, Hampshire and Hardy counties. Other areas may be infested.

The entomologists state that the occurrence of the insect in such great numbers indicates it is firmly established in these areas and will migrate to other areas and create a serious problem unless satisfactory control is established.

The entomologists have found that the weevil is most destructive in the larvae form. At that time they are green in color, have a white line running down the center of the back and have black heads. Fully-grown larvae are about three eighths of an inch long. In its mature form, the weevil will be only about one fourth inch long. It is gray in color, and has a dark line on its back.

A serious infestation of alfalfa weevil can cause complete loss of the alfalfa crop. Lesser infestations cause

reduced hay yields. The larvae attack the young leaves at the tip of the plant, and as the larvae eat, these leaves assume a "shot-riddled" appearance. Mature weevils will feed on older leaves.

The alfalfa weevil will also attack other legumes, such as beans and clover, if they cannot find alfalfa to feed upon. The Experiment Station entomologists are quick to point out the seriousness of an alfalfa weevil infestation and recommend control of the weevil by use of insecticides.

★

Farm economists report that it is false economy to cut down on essential crop production items as a means of beating the present cost-price squeeze. Actually, they may reduce income more than outgo.

U.S. Department of Agriculture economists say that farmers may find it pays to use more instead of less of certain items used in producing crops and to increase their management efficiency.

Take fertilizer, for example. Prices of plant food have gone up only 30% since World War II, whereas some other items have risen 80 to more than 100%.

The economists cite dairying as an instance of how costs can be cut by more efficient management practices and better use of some crop producing items.

Many farmers are not using enough fertilizer to get maximum yields of pasture and hay according to these economists. Yet dairying costs can be greatly reduced by growing better and cheaper roughage instead of purchasing expensive concentrates.

Some farmers do not prepare adequate seedbeds for hay and pasture. Others are not using the most efficient haying equipment. And still other dairymen wastefully increase their costs by feeding protein supplements when their cows are on high protein pasture. The economists say that lower costs and higher profits depend on using the best combination of production items and management methods.

★

Peach tree borers are no longer the serious threat they once were, thanks to new insecticides.

"But there are two kinds of borers attacking peach trees and this affects the control program," says Edward H. Smith, Cornell entomologist, at the Experiment Station at Geneva. "The borer best known to growers is found at soil level. It is effectively controlled with DDT sprays. But DDT is not effective against the other species known as the lesser peach tree borer which is found higher up on the trunk and scaffold branches."

For the home orchardist a new material known as malathion gives effective control of both species of borers, according to Dr. Smith.

★

Dick Dodge, Vermont extension dairyman, reports that 168 corn silage samples were tested at the University of Vermont during the 1954-55 barn feeding season.

Windham County topped the others in average total digestible nutrients with 15.86. Bennington County had the highest average of protein and total digestible protein with

figures of 2.16 and 1.15 respectively. Bennington's 24.08 was the top figure for dry matter.

Mr. Dodge suggests, "You will be able to make top-quality corn silage if:

"It is raised on well drained land which has been limed and fertilized. Use 10 to 20 loads of manure per acre, plus 200-300 of a double-strength fertilizer per acre through planter, with 150 lb. ammonium nitrate per acre at last cultivation.

"You should use a variety that will mature locally. Ask your county agent about recommended varieties. Plant to give every stalk nine inches.

"Keep weeds down, either by spraying or cultivating. Keep the land stirred up so that the corn roots can breathe. Don't cut your corn silage until the ears are in the hard dough stage. When earlier cutting is necessary wilting will help. Keep it well distributed and well packed in the silo."

★

Dairy farmers can get more milk per cow per acre at a lower unit cost of production, by making fullest use of high quality pasture, hay and silage. This can help ease the present dairy profit squeeze, reports the Middle West Soil Improvement Committee.

Savings of as much as 25% on feeding costs can be made by using good forage to replace some of the grain in the dairy herd's ration, says the committee, in citing a statement by U.S. Department of Agriculture dairy specialists.

Other cost-cutting steps include:

(1) Get rid of unprofitable low producing cows; (2) Use labor-saving equipment and practices as far as possible; (3) Reduce expenses of handling, processing and delivering milk.

Pasture production could be doubled or tripled on many farms by improved management methods. This means that the pasture can support more cows per acre. Improved management methods should include liming where needed, the use of fertilizer; well adapted, disease-resistant, winter-hardy seed, and good grazing management.

Adding plenty of plant food at the time of seeding and top-dressing regularly can not only boost pasture yields but also can increase the protein content of the roughage.

★

Winston Way, Vermont extension agronomist, recently conducted liming schools for state Agricultural Stabilization and Conservation representatives in each of the 14 counties in Vermont.

Speaking on how much to apply, Mr. Way stresses, "A soil test is the best way to determine the need for liming and re-liming. Soil tests made periodically provide a useful record of progress in building soil fertility.

"Soil tests provide the only way of determining the correct amount to apply. While pH is an easy method of testing acidity it does not tell how much lime is needed to neutralize it.

"Liming is a sound practice from the standpoint of soils, crops, livestock and good business. When properly used in conjunction with fertilizer, good seeds and good management there is no doubt that it pays. Lime is truly the basis of successful dairy farming."

★

Two weevil pests of chestnuts can be controlled by a three-pronged attack against them in trees, soil and

harvested nuts, according to a new U.S. Department of Agriculture publication.

Specialists of the Agricultural Extension Service West Virginia University, cite that Leaflet 384, "Chestnut Weevils: How to Control Them," can help the 250,000 chestnut growers of the eastern and coastal plain states to control these insect enemies of their crop.

Spraying trees with DDT to kill the weevils before they lay their eggs, fumigating soil around the trees to kill grubs overwintering underground, and fumigating nuts harvested from infested trees are the three control measures recommended by Agricultural Research Service entomologists.

★

A new approach to an old problem is being recommended to Long Island potato growers by the Long Island Vegetable Research Farm here.

The old problem is to stop financial losses caused by potatoes sprouting in storage. The new approach is a growth-control chemical that is sprayed on the potato plants after the potatoes are fully formed, but before they are dug out of the ground. The chemical is taken in by the plant's leaves and moves down through the plant to the tubers. Enough of it remains in harvested potatoes to prevent them from sprouting in storage.

The chemical is maleic hydrazide or MH-40, a growth retardant developed by Naugatuck Chemical Division, United States Rubber Co. At the Long Island experiment station Riverhead, tests have been made with the chemical for the past three years.

The research farm's potato specialist, Dr. Richard Sawyer, says, "MH-40 looks sufficiently promising that farmers interested in holding their crops in storage into January should try it on an experimental basis to satisfy themselves on its merits."

Although housing development have taken over some Long Island potato land, growers will still plant about 50,000 acres of potatoes this year. This makes Long Island one of the biggest potato producing areas in the country. It also means that a large part of the crop will have to be stored as it comes out of the ground.

For the field tests Dr. Sawyer recommends 7 lb. MH-40, mixed in 10 to 150 gal. water, be sprayed per acre. The chemical should be sprayed just after blossom fall. To make sure the tubers are fully formed, Dr. Sawyer suggests that growers dig under a few hills to check the tubers before spraying.

Massachusetts Gypsy Moth Spray Completed

BOSTON—The 1955 gypsy moth aerial spray program finished a week ahead of schedule, Arthur T. Lyman, commissioner of natural resources has reported. Some 800,000 acres of farm and forest land were sprayed with DDT.

Sprayed areas were in Berkshire, Worcester, Middlesex, Norfolk and Essex counties. The job was done this year by converted B-17 bombers. Flying out of Worcester and Beverly airports they carried 2,700 gal. insecticide, enough for 3,600 acres per trip.

Cost of the operation was \$402,118 originally appropriated plus an extra \$64,000 for defoliated areas in 10 Berkshire towns. Harold Ramsey, superintendent of insect pest control, said a survey of the spray effectiveness would be made next month.

CUSTOM

Fuel Selling

BOSTON,

New England recently heard lectures on advantages of lawns and custom addressing. Allan B. F. is a manager of New Bedford oil firms to a larger business.

In his talk Prof. Prince of application of soil can damage that ration and to soil fertility level may be different.

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Prof. Prince dealers that potassium of broad-leaved plants, and ration equipment may hinder costs. The equivalent a greater in compared to the

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CUSTOM LAWN APPLICATIONS

Fuel Dealers Hear Talks on Selling of Liquid Fertilizers

BOSTON, MASS.—Members of the New England Fuel Dealers Assn. recently heard a series of educational lectures on both the hazards and advantages of applying liquid fertilizers to lawns and other grassy areas, on a custom basis. Among speakers addressing the meeting were Prof. Allan B. Prince, associate agronomist at the University of New Hampshire and Thomas F. Healy, sales manager of the Hathaway Oil Co., New Bedford, Mass., one of the first oil firms to get into the liquid fertilizer business.

In his talk before the fuel dealers, Prof. Prince pointed out that application of liquid fertilizer to a dry soil can damage grass roots and added that regulation of the concentration and frequency of application to soil conditions, (such as present fertility level and physical condition) may be difficult to do efficiently.

"There will probably be a need at times to adjust the formulation to particular soil needs," he said, and went on to point out the dangers of over dosage, particularly, if the fertilizer contains minor plant nutrients in appreciable amounts. "I recommend that fertilization with minor plant nutrients be treated as a separate problem," he declared.

Prof. Prince also told the fuel dealers that frequent applications of potassium may stimulate the growth of broad-leaved plants, such as the clovers, and that corrosion of application equipment by liquid fertilizers may hinder operations and increase costs. The cost to the consumer using equivalent amounts of plant food, is greater in the liquid form as compared to the solid, he declared.

That the northeastern part of the United States is not a natural grassland area, was pointed out by the speaker. "This may at first seem strange to you when you see lawns, hay fields and pastures everywhere. Consider the reason why this grass is growing so well. The grass is there because man has done something to change the natural condition of the soil so that it will grow grass. When the white man first came to America, the natural cover was trees and the natural cover today is still trees. "What soil characteristics are responsible for this phenomenon? I think I can best answer the question by comparing the soils of the natural grassland areas in the Middle West with those of New England.

"The soils in the Middle West are deep, well drained, rich, open in structure, and high in their capacity to hold water. In contrast, the soils in New England are not so deep. Often bedrock is within a few inches of the soil surface. They are highly leached, acid, and less well aerated than the soils of the Middle West.

"We are bucking nature when we attempt to grow grass in this area. We must lime and fertilize, add organic matter, and sometimes drain and irrigate. We must wage a constant battle to maintain conditions favorable for the growth of grass." Mr. Healy reported that his firm in the early spring of 1954, "obtained from the Smith Equipment & Supply Co. of Chicago a franchise to cover our territory to spray their product, Fertile-Ade. All sales literature was supplied by them free of charge.

"We were fortunate to have on hand a 600 gallon, 2 compartment

1947 Ford truck which we were no longer using. After sudsing and steaming out the tank and replacing the present fuel oil hose with a 3/4 in. hose, 200 feet long, we were ready to start our venture. The truck was painted white and lettered in green and made a striking appearance.

"It was decided to use the present pump; however, the meter on this truck, because of its aluminum parts, froze up early in the season. The present state law (Massachusetts) demanding a metered slip showing 25 gallons of mixture per 100 square feet was non-existent at that time, so we finished the season without a meter. This year, however, we have installed a water meter at a cost of approximately \$35.

"It is impossible to come up with an average number of lawns that can be sprayed in any 8 hour day. We do know that we can do approximately 4000 square foot lawns in an 8 hour day and just about break even in cost of labor, materials and overhead expenses. Large areas, closely concentrated, have to be sold to make the investment worth while.

"We do not use a weed killer and have avoided any insecticides except on buyer's request. We are using Shell's dieldrin, which we used at 9 pts. per 600 gallon truckload at a cost of \$9 and we charge 75¢ per 100 square feet in addition to the spraying charges. This allows a net profit on dieldrin of \$9 per truckload."

OVER THE COUNTER

(Continued from page 9)

records and hasn't overextended his credit is a safe bet to be in to "settle up" when he gets his money from his crops.

Dealers who have not been selective enough, who haven't used the proper discretion in limiting or even denying some doubtful credit seekers, will have reason to start worrying now.

Credit—like fertilizer—is not a cure-all for inefficient farming or poor management. Credit to finance unprofitable enterprises may merely speed an overzealous borrower on his way to insolvency.

In most cases credit problems are most satisfactorily answered and handled by the institutions which are specialists in money matters—banks. Few dealers can afford to take the responsibility of acting as bankers for fertilizer buyers.

Small Amount of Conditioner Economical For Vegetable Application

GENEVA, N.Y. — Experiments at the New York State Agricultural Experiment Station here in 1952-1954 showed that a small amount of soil conditioner in a narrow band placed over the vegetable seed row at planting time reduced crusting and increased seedling emergence.

The station recommends a solution of 4 oz. active ingredient per gallon of water applied at the rate of 1 to 2 gal. per 1,000 ft. seed row. At \$2 lb. the material would cost between 50¢ and \$1 for each 1,000 ft. row.

Better Selling

Richer Sales Fields for Dealers



RINGING THE cash register

Merchandising Hints for The Retailer

Getting Top Employees

The belief that the best type of employee for the farm retailer comes from the farm is confirmed in a survey conducted by the Ralston Purina Co. The company asked 813 top feed store employees this question: "What were you doing before you went to work for your present employer? Here are their answers: Farming 195, owned business 161, feed store employee 81, factory work 68, store clerk 47, farm supplies salesman 44, miscellaneous 37, teacher vo-ag, etc. 26, in service 29, going to school 29, truck driver 27, construction work 23, accounting 19 and filling stations 17. Purina reports that there is a general agreement that men with farm backgrounds make excellent employees. These men have the advantage of being able to "talk the farmer's language" from the start. However, it must be pointed out that not every man with a farm background will make a good employee or excellent employees do not come from other occupations.

Make Signs Big, Bright

"Make 'em red, white and big." That should be the order for you to issue when you want some lettering on your delivery truck. Don't hide your store name, or brand in small, hard-to-read letters. The same suggestion applies to all signs, whether they are on trucks, the store front or on a display. Don't make sign reading difficult for the prospect. Make sure he understands at first glance what business you are in. He expects it of all sound merchandisers. Make sure farmers won't have to wear glasses when your delivery truck comes down the road.

Give Them A Ring

One retailer states that over a period of time he has collected a list of names and telephone numbers of customers who would like to be called when he has a special item or product available. On slow days, when the salesmen are not very busy, he has them call each customer personally and inquire if they would like to have an order of this special item placed aside for them to pick up at a certain time.

Biggest Challenge

Personnel—adequately trained for selling—is called by many industries as the biggest challenge to expansion. A spokesman for one industry claims that the greatest advances will come in the field of "people." Better selection and better training of people will become the No. 1 "must" for the forward looking operator. "People in quantity" must take a back seat to "people of quality." He says, "We will have to appraise our selection systems and our training programs. We will have to expand our formal education facilities and we will have to find a better recipe to blend these two into an over-all program from whose hopper we will be able to feed a continuous stream of qualified personnel into our operations."

Poor Planners

In a recent survey, citing the experiences of 180 companies, the American Management Assn. found that aside from failure to produce satisfactory sales, the single weakness in salesmen's overall job performance was poor planning and organization of time and effort. Other faults uncovered were: Lack of effort, ambition, aggressiveness, stamina and motivation. The effectiveness of the old-fashioned interview has not been replaced by aptitude tests, personality profiles and other new devices, the association report stated.

Give-Aways, Pro and Con

Discussions pro and con concerning stamps, give-aways and circus promotions continue in the feed industry. One dealer in favor can readily be offset by another who has nothing but disdain for give-aways. One school of thought is that if the dealer is in a position where he is forced into using such a feature it is better to put all the ammunition into one truly outstanding offer, rather than having a lot of special features, none of which taken by itself is truly unique. In this manner, it is argued, the sales staff can easily understand the offer and concentrate on it more than if there were a dozen features. . . . Another views with some misgivings the expense for promotions: "If we are going to continue on stamps, give-aways and circus promotions, they have to cost money, and whether the temporary gains are going to be lasting is something that only the future can show. I cannot see how these extra expenses are not necessarily going to have to reflect themselves in higher prices. Those who are not going to indulge or who are using the type of plans which enable them to shut it off at any time will be in a more favorable position over a long period of time."

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MILLER AMENDMENT

(Continued from page 1)

new procedures for the Food and Drug Administration in Washington to use in establishing official limits on how much of the spray or dust can remain on a crop.

What does it amend?

It amends the Federal Food, Drug and Cosmetic Act, ordinarily referred to as the Pure Food Law. This law requires food shipped in interstate commerce to be pure and wholesome.

What is the purpose of the Miller amendment?

Pesticide sprays and dusts are essential to assure the continued supply of high-quality foods. The new law is designed to permit the effective use of these sprays and dusts in the production of food without hazard to the consumer.

What does this law mean to growers?

It will enable the grower to know with reasonable assurance what sprays and dusts he can use on his crops.

When residues are left on crops, how can the grower know they are within the limits set by FDA?

Growers who follow the approved directions for application and good agricultural practices should under normal conditions have no problem with pesticide residues. If the label says one pound per acre, it means one pound, not one and one half or two. If the label says, do not apply within one month of harvest, it means just that. It is dangerous to ignore approved label directions.

What does the term "pesticide chemical" cover?

This term refers to the effective chemical ingredient in sprays and dusts used by the grower to control insects, weeds, plant disease and other farm pests. For convenience, however, the term sprays and dusts is used here to refer to "pesticide chemical" as it is defined in the law.

Does the Miller Amendment affect the use of defoliants, desiccants and other agricultural chemicals?

No. It covers only pesticide chemicals. Defoliants, desiccants and other agricultural chemicals are not used to control pests. Thus, they are not pesticides under the Miller Amendment.

Are fruits, vegetables and grains covered by the law?

Yes. The law affects the use of sprays and dusts on all "raw agricultural commodities." For practical purposes, this means all crops produced on the farm. It includes fresh fruits, whether or not they have been washed and colored or otherwise treated in their unpeeled natural state; vegetables, whether or not they have been stripped of outer leaves, waxed or prepared into fresh green salads; grains, nuts, eggs, raw milk, meats and similar agricultural produce. It does not include foods that have been processed by cooking, freezing, dehydrating or milling. The term "crops" is used here to mean raw agricultural commodities as defined in the law.

Does the law cover processed foods?

Only indirectly by placing limits on the pesticide residue which can legally remain in or on crops.

What is meant by pesticide residue?

In general terms, this means the amount of pesticide chemical left

in or on the crop when it is harvested.

11. What is a tolerance?

This is the official term for the amount of pesticide residue which can legally remain in or on a crop. For example, a tolerance of 5 parts per million means that no more than 5 parts per million by weight of that chemical may legally remain in or on any food when it enters interstate commerce.

12. When a tolerance is established by FDA, what does that mean?

It means that FDA is satisfied that when properly used, the residue, if any, of the chemical will cause no danger to public health.

13. Does a tolerance set for a specific chemical apply to the use of that chemical on all crops?

No. A tolerance is set for residues of a chemical on specific crops which are named in the FDA order setting the tolerance. Sprays and dusts stick to some crops more than to others.

14. If tolerances for two chemicals are different, does that mean that one is safer than the other?

No. Residues of a spray or dust which are not greater than the official tolerance are safe on crops. This is true whether the tolerance is high or low.

15. What does an exemption mean?

There are few chemicals which are exempt from the requirement of a tolerance. FDA considers that any residue which results from the normal use of these chemicals on growing crops will be safe if the spray or dusts are applied according to good agricultural practices.

16. Does a "zero" tolerance mean that the material can't be used on crops?

No. FDA sets a zero tolerance on chemicals which should be used in such a way that no residue will be left in or on crops. These chemicals may be sprayed or dusted on crops if no residue remains at harvest time.

17. If a tolerance has not been established for a spray or dust, what does that mean?

It means that if any residue of that chemical remains on a crop, the crop is subject to seizure and condemnation when it is introduced into interstate commerce. Some chemicals, as mentioned before, leave no residue and may not be given a tolerance for that reason.

18. How can a grower find out whether or not a tolerance has been established for a specific spray or dust on a particular crop?

He can write to the manufacturer of the pesticide, to his nearest Land Grant College, or to the Food & Drug Administration, Washington 25, D.C.

19. Will the Miller Amendment cause any special problems for growers?

Provisions of the law are not expected to create any special problem or cause any major changes in recommended spraying and dusting schedules. Many informal tolerances have been in effect for some time and manufacturers generally have been required to show that if their directions are followed, residues less than the tolerance would result.

20. Are there any precautions growers should take?

Carry out to the letter instructions for the proper use of pesti-

cide sprays and dusts. Use the sprays and dusts only as directed—on the crops specified, in the amounts specified, and at the times specified. Read the label before each use. Consult your local agricultural advisor on spraying and dusting schedules.

Fertilized Rangeland Called Big Opportunity In California

DAVIS, CAL.—Earlier and fatter lambs can be produced on rangelands through proper use of nitrogen fertilization, the California Wool Growers Assn. was told at the recent 95th annual convention, on the Davis Campus of the University of California.

W. E. Martin, soils specialist in the Agricultural Extension Service, said that ranges ready for grazing in December are generally possible in California's mild climate.

Nitrogen will do the trick. It isn't the cold that prevents the pasture from growing during the winter in much of California's rangeland, he said. It is lack of nitrogen. The decay of vegetable matter is slower in cooler weather and there is less nitrogen released for the growth of grass.

"Nitrogen will give us winter growth," said Mr. Martin, "and we can have feed available in mid-December where we fertilize. Fertilizing rangeland is one of our big opportunities to make the most of rangeland in California."

CRICKET, HOPPER DRIVE

CHEYENNE, WYO.—Wyoming has launched its 1955 campaign against Mormon crickets and grasshoppers with the aerial baiting of 6,000 acres in Crook County and Johnson County.

Texas Weather Settles Down; Insects on Increase in Some Areas

COLLEGE STATION, TEXAS — Since the official arrival of summer, Texas weather has become stabilized, with less damage from heavy rains, hail and high winds.

In areas where showers continue to fall, insect infestations are becoming heavier, according to G. G. Gibson, director of the Texas A&M Extension Service. In the Panhandle, airplanes are being used to combat serious grasshopper infestations.

In Northeast Texas, boll weevils are on the increase, while fleahoppers and grasshoppers are causing damage to farms in the west part of this section.

In North Texas, thrips and boll weevils are causing some damage. Feed crops are in good condition, and pastures are making excellent growth.

Skipping across six hundred miles to far west Texas and the Rio Grande Valley, insect infestations are generally light. Irrigated cotton is growing fast after a slow start. Except for the yellow clover aphid holding down alfalfa growth, the area farmers are not yet worried about insects.

CHIEF CHEMIST NAMED

LOS ANGELES—American Potash & Chemical Corp. has announced the appointment of Clay Waggoner as chief chemist at the new San Antonio, Texas, plant of American Lithium Chemicals, Inc., in which American Potash & Chemical Corp. owns 50.1% interest. Mr. Waggoner was given the assignment as a promotion from his present position as head of the analytical section of the research department at American Potash & Chemical Corp.'s main plant at Trona, Cal.

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Bright Economic Position For Corn Seen by Speakers At Iowa Agronomic Meeting

AMES, IOWA—Some 400 persons attended the mid-summer meetings of the North Central Branch of the American Society of Agronomy at Iowa State College, held here June 26-29.

Research and extension men, teachers and representatives of industry from at least 20 states wound up the four-day session with a tour of the outlying experimental farms of the college as they returned to their homes.

During the four-day session, the men reported on recent findings on important corn belt farming problems and inspected the experimental work being conducted by the division of agriculture at the college. It was the first meeting of the organization at Iowa State College in 15 years.

Elected president of the group for the coming year was Dr. J. B. Peterson, head of the agronomy department at Purdue University. Other officers are: vice-chairman, Dr. T. E. Stoa, chairman of the agronomy department at North Dakota State College; secretary-treasurer, Dr. Floyd W. Smith, professor of soils at Kansas State College. Dr. W. H. Pierre, head of the agronomy department at Iowa State is the retiring president of the group.

In opening the four-day meeting, Dean Floyd Andre of Iowa State College urged the scientists to spur their efforts in providing adequate and reliable information to farm people. From one tenth to one fourth of the research effort should be aimed toward fundamental investigations, he said. This type provides a foundation for the work that answers practical every-day farming questions, he stated. Dr. Andre also stressed the need to bring the best brains into the field of agriculture to prepare for the problems that are sure to face farmers in future years.

In a corn symposium, Dr. Earl O. Heady, Iowa State College farm economist, asserted that the position of corn is relatively bright in the period of economic growth ahead. He related the position of corn in the next few decades to the nature of growth of the national economy and the kinds of consumer demands it brings with it.

"In an economy growing wealthier," he pointed out, "the absolute demand for such things as potatoes and fats declines; demand for wheat increases at a smaller rate than population; but corn fits the economy differently. Grain-finished livestock products have a relatively high demand increase. In fact it is almost as large as for fruits and vegetables, for which a wealthier-growing economy attaches priority."

Agronomists John Pesek and I. J. Johnson of Iowa State reviewed the effects of research in soil fertility, crop improvement and management on corn production in Iowa. Since hybrid corn went into wide usage, Mr. Johnson said, the state corn yield has increased 15 bu. an acre. Both men expect to see the impact of past, present and future research in the corn growing methods. Mr. Pesek said he could foresee a shift in the future to more years of corn in sequence than is now commonly practiced. Mr. Johnson said he expects to see further improvement in yield and other characteristics such as lodging, dropped ears, and adaptation to higher plant populations.

An 85-bu. corn yield per farm is a practical, worthwhile goal, extension agronomist E. R. Duncan told the group. "Rather than seeing 125- to

150-bu. individual yields in the future, it would seem more realistic, and a good deal more profitable as far as our economy is concerned, to have as many fields as possible approaching the 85-bu. average than having a few fields very low and a few very high, striking an average of 85 bushels," he said.

The soil and crop scientists who have developed many of the improved practices that have now become standard in the corn belt are turning their attention to the tillage operations. They are seeking to grow corn by easier, cheaper and better methods.

Dr. R. L. Cook of Michigan State College, said a system of "minimum tillage" has given higher yields, easier weed control and lower production costs. Minimum tillage for corn generally means a good job of moldboard plowing with a light tillage implement attached to the plow, he said. Planting follows immediately behind plowing, with the seeds firmly pressed into the soil by packing wheels. This method of planting results in a firm seedbed with a loose, well aerated root bed, Mr. Cook reported.

Mulch tillage in Iowa seems to be best adapted to the better drained soils that are in good physical condition, according to the observation of Dr. W. E. Larson, of the U.S. Department of Agriculture stationed at Ames. Dr. Larson said that sometimes mulch tillage results in lower nitrogen availability, with lower nitrogen uptake and lower yields. He also reported that Iowa studies show listing to be a cheaper method of seedbed preparation than plowing and more effective in preventing soil erosion.

Speaking to the point of available nitrogen in the stubble mulch practice, Dr. T. M. McCalla of the University of Nebraska said that findings in Nebraska show that stubble mulching lowers available nitrogen content of the soil by 7%, compared to plowing with either legume or non-legume residues. However, he added, the release of nitrogen from legume residues in the stubble mulch has been sufficient for a large crop yield. Considerably more nitrogen was released from legumes than from straw residues.

Also speaking to the same point, Dr. C. M. Woodruff, professor of soils at the University of Missouri, reported that Missouri tests have indicated that corn following a legume which was removed for hay has out-yielded corn following corn by an amount that corresponds to the delivery of approximately 20 lb. nitrogen for each ton of legume hay harvested.

Water solubility of phosphorus in fertilizers for corn seems to affect the early growth of the corn plant and final yield. Research agronomist John Webb of Iowa State discussed his research at locations in Iowa, testing the responses of corn to phosphate fertilizers that differed in the amounts of phosphorus they contained in water-soluble form. His study covered the use of these fertilizers as hill or row starters and for broadcast plowed-down application.

Three nitric phosphates used by Mr. Webb as starters had water-soluble percentages of 41, 14 and 2%, respectively. They were compared to an application of superphosphate, which was 90% water-soluble.

When early plant growth was checked in late June of last year, these discoveries were made: The fertilizer with 2% of its phos-

phorus water-soluble had increased plant growth only a fifth as much as superphosphate; the 14% water-soluble material had increased growth about two thirds as much as superphosphate; and the 41% soluble material had increased growth nearly nine tenths as much as superphosphate and more than four times as much as the material with the 2% water-soluble phosphate. Differences at harvest time last fall also followed the same trends.

The increases for fertilizer with more water-soluble phosphorus was greater when the fertilizer was applied in the hill or row as a "starter" than when it was broadcast, he stated.

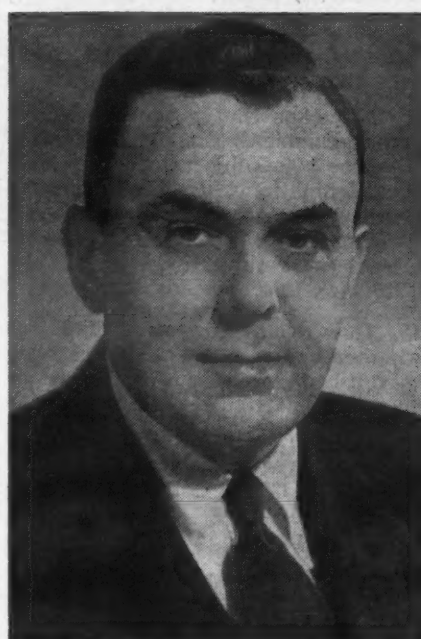
Five tours highlighted the final day's activities. One was a 60-mile tour of central and southeast Iowa soils. Four were tours of outlying experimental farms on which the college conducts experimental work. All of the tours were arranged along main routes of travel for the men who were returning to their home states.

In the experimental farm tours, the visitors saw part of an experimental farm system unique in this section of the country. All of the farms are owned by local associations of farmers and businessmen, which purchased them for leasing to Iowa State College as sites for study of major farming problems. There are 14 such farms now in operation, with 11 of them owned by local experimental associations.

Chemical Employment Steady in California

SAN FRANCISCO — Employment in chemical manufacturing industries, including farm chemicals, held fairly level between February, 1954, and February, 1955, according to a recent report by the Division of Labor Statistics and Research of the California State Department of Industrial Relations.

Employment during February of this year, the latest month for which figures are available, was 34,500 wage and salary workers in the state, as compared with 34,700 in February of last year, and 34,700 in January of this year.



Lloyd H. Finke

PROMOTED — Lloyd H. Finke has been promoted to Chicago district sales manager for Arkell & Smiths, manufacturers of multiwall and specialty paper bags, according to an announcement from Roy E. Jury, western divisional sales manager. Mr. Finke has been associated with the firm for 16 years, the last five in Chicago. He will be assisted in the Chicago office by Doug Young who recently went to Chicago after completing orientation at the company's plant in Canajoharie, N.Y.

Gloomicides

A frog was caught in a deep rut in a road and, in spite of the help of his friends, could not get out. Finally his friends left him there in despair, but the next day they saw him out of the rut and as chipper as ever.

"I thought you couldn't get out," said one of them.

"I couldn't," replied the frog. "But a truck came along and I had to."

★

A young girl walked up to a housewife and began asking a series of questions about the small children in the home.

"Do they kick, scratch, yell, or bite?"

"No," answered the housewife.

"Do they insist on sitting up late?"

"No," answered the housewife, then added, "Why are you questioning me so closely? Are you taking a census?"

"No," the girl replied. "I have you down on my list as a prospective baby-sitting client."

★

An elderly couple from a rural community were fascinated by the window display along the main city street. For a long time they stood watching a demonstrator place a bunch of laundry in a washing machine with the resultant swirling and splashing of water. "Well," said the old lady at last, "if that's television they can have it."

★

He (at the movies): "Can you see all right?"

She: "Yes."

He: "Is there a draft on you?"

She: "No."

He: "Seat comfortable?"

She: "Yes."

He: "Mind changing places?"

★

Doctor (to woman complaining about his unreasonably high bill): "Don't forget, I made eleven visits to your house while your son had the measles."

Woman: "And don't you forget—he infected the whole school!"

★

When the world needs is a close agreement on what the world needs.

Maisie: "Did you know I'm going to be married?"

Daisie: "I thought you despised men."

Maisie: "I do, but this one asked me to marry him."

★

An old timer: one who remembers when a baby-sitter was called mother.

★

"Who is that brunette over there?"

"That's Ray's wife. Don't you recognize her?"

"Why, I thought he married blonde!"

"Oh, yes, he did; but she dyed."

★

Returning to a small village after her runaway wedding, the bride said to one of the elder inhabitants: "Suppose my elopement was a nine days' wonder?"

"It would have been," replied the old fellow, "only Higgins' dog was mad the same night."

★

The 6th-grade son of a psychology professor was sitting dejectedly on the front steps. There was no one it seemed, to play with, because his friends were doing homework.

"And why," asked the psychologist, "aren't you doing yours?"

"Well, Dad," responded the son, "never bring any home. You see, I adjusted myself to inferior grades."

IDEA OUTLIVES CRITICS

Despite "Narrow Views" of Originators, Illinois Test Plot Is Still Going Strong

URBANA — For only the second time in 79 years, treatments have been changed on the Morrow Plots at the University of Illinois, the oldest soil experimental plots in the U.S.

The plots were established in 1876 to settle the controversy then raging about whether or not the prairie soils of this area could be depleted.

That question was settled by 1904, and the agronomists asked the plots another question. Could they by certain treatments maintain or even improve the soil fertility? That question has now been answered. But a new controversy is raging. Are legumes and animal manures necessary? Can chemical fertilizers do what the organic fertilizers have done?

Of the 10 plots George Morrow set up in 1876, three remain today. One is in continuous corn; one is in a corn-oats rotation; and the third is in a corn-oats-clover rotation. The first phase was a study of soil depletion. By 1904 the plots had shown that soil could be depleted but that rotations—simply changing the crops—could prolong the time it took. The first phase had ended.

The second phase was a study of maintaining productivity or even increasing it. Each of the three plots was divided. The north half was continued without treatment. Part of the land now has its 80th consecutive corn crop on it. The south half of each plot was treated with phosphate, limestone and manure. Treatments have been renewed as they were needed.

A strip cutting across all six plots this spring received fertilizer at the rate of five tons of lime, 200 lb. nitrogen, 500 lb. 20% superphosphate, and 200 lb. 50% muriate of potash to the acre.

The strip covers a fourth of each plot. Where the strip crosses the north half of the three original plots it will be the first soil treatment in 79 years. The continuous cropping record with no treatment will still be maintained, however, as will the two rotations without treatment.

Questions the agronomists now are asking Morrow Plots are these—Can this almost depleted soil come back? To what level can it be returned? How fast can it be brought back? Will commercial phosphorus, potassium, and nitrogen equal or surpass manure in bringing it back? Will the benefits of commercial materials be increased with rotations and with rotations with legumes? Do stand-over legumes increase benefits from the commercial fertilizers?

Here are some answers they have gotten already. Continuous corn will wear out the fertile prairie soils. Yields on the continuous corn plot are down to 19 bu. an acre. Another answer is that rotations will prolong the time of depletion. Corn in the corn-oats rotation has averaged 29 bu. an acre, and corn in the corn-oats-clover rotation has averaged 74 bu. an acre.

Another answer is that manure, lime and phosphate will maintain and improve the soil. Yields of continuous corn average 74 bu. an acre with this treatment. On the corn-oats plots, treatment has raised yields to 101 bu. an acre, more than three times the 29 bu. with no treatment. On the corn-oats-clover plots, treatment has

raised yields from 74 to 113 bu. an acre.

The Morrow Plots have a colorful history and supply us with the longest continuous record of cropping of any experiments in this country. But they weren't always so popular.

George Morrow, professor of agriculture, was in the middle of the controversy when he set up the plots. A farm writer of the time wrote in 1876, "It is most unlikely that they can ever be of value to any farming lands in any of the western states, particularly good corn land."

"It is very much to be regretted that these agricultural college professors have such narrow views of their duties. If they looked at home more and stopped their periodic visits to Europe, certainly these theoretical teachers could find enough to do without imitating European experiments."

The writer was referring to the Rothamsted Plots in England, the only plots in the world which are older.

A little more widely accepted viewpoint is that expressed by Charles A. Platt, supervising architect for the library and other university buildings. Standing in front of the plots in 1924, he remarked, "This is the most valuable piece of ground in America."

Another big name in Illinois agriculture, Cyril G. Hopkins, figures in the history of the plots. It was Hopkins who changed the treatments on the plots in 1904.

The plots today are under direction of a committee of agronomists who also have charge of the state network of soil experiment stations—A. L. Lang, L. B. Miller and C. H. Farnham.

NEW BOOKS

Grassland Farming

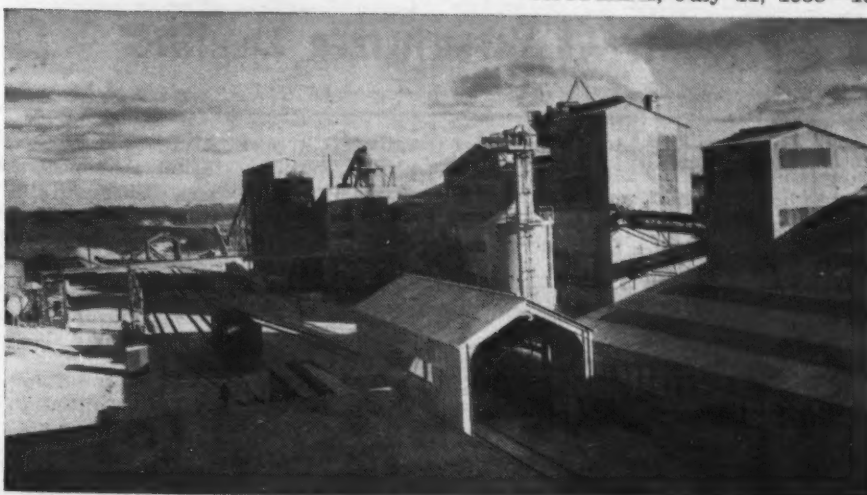
The high esteem in which agriculturists hold grassland farming is well typified in a new book written by two widely known authorities in feeds and crops. Entitled "Grassland Farming," the book, while dealing mainly with active farm operations in grassland management, dovetails its information excellently so that it is of benefit to feed and fertilizer dealers, manufacturers and suppliers.

The authors are George H. Serviss, agronomist, Cooperative Grange League Federation Exchange, Ithaca, N.Y., and Gilbert H. Ahlgren, professor and research specialist in farm crops, college of agriculture, Rutgers University, New Brunswick, N.Y. The publisher is John Wiley & Sons, Inc., New York.

Chapters are devoted to: Growing grassland crops, using forage in livestock feeding, growing forage for profit, selecting legumes and grasses, choosing seed and establishing seedlings, adding lime and fertilizer, managing pastures and hay crops, preserving forage, conservation cropping and equipping the grassland farm.

Chemist Retires

BURLINGTON, VT. — Charles H. Jones, 84, chemist emeritus at the University of Vermont for the last 10 years, retired July 1. Mr. Jones joined the Vermont Agricultural Experiment Station in 1896, and continued to serve as a chemist until his retirement. Much of his work was in analyzing fertilizer and feed.



GRANULAR FERTILIZER PLANT—Missouri Farmers Association has recently completed a new granular fertilizer plant near Joplin, Mo. This general view of the plant shows phosphate rock storage silos and grinding facilities at left center. Central group of buildings houses phosphoric acid plant and fertilizer production section. The product is stored in the building at the right. Using a newly developed process to produce diammonium phosphate, MFA makes concentrated granular fertilizers such as 14-14-14; 14-28-14; and 12-36-12. The five-million dollar plant was designed by Dorr-Oliver, Inc., Stamford, Conn. The capacity of the plant, 200 tons a day, was attained three months after initial operation.



ANTIBIOTICS—Agricultural and medical scientists exchanged views after a symposium on "The Impact of the Antibiotics on Medicine and Society" held recently at the New York Academy of Medicine. Dr. Herbert G. Luther (left), director, agricultural research and development department, Chas. Pfizer & Co., Inc., discussed application of antibiotics to the livestock industry, while Dr. Louis G. Nickell (right), Pfizer plant physiologist, spoke on their use in plant husbandry. In the center is Dr. Iago Galdston, secretary of the academy.

Field Day To Honor Dr. Donald F. Jones

NEW HAVEN, CONN. — Dr. Donald F. Jones, who invented the double-cross method of hybrid seed-corn production, will be honored at the annual field day to be held at the Connecticut Agricultural Experiment Station's Experimental Farm, Mt. Carmel, Aug. 16. Dr. Jones is head of the Genetics Department at

the Station. Another pioneer in the field of hybrid corn production, Henry A. Wallace, will give the principal address at "Donald F. Jones Day."

MORE BLUEGRASS SEED

LEXINGTON, KY. — Woodford County, Ky., farmers have increased bluegrass seed yields two to four times by controlling insects and applying fertilizer.

SOILS and FERTILIZERS

Fourth Edition

By **FIRMAN E. BEAR**, Research Specialist, New Jersey Agricultural Experiment Station.



1953. 420 Pages \$6.00

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NORTHWEST FERTILIZER MEETING

(Continued from page 1)

available supply large tonnages, are now being used," he reported. "There are indications that phosphorus and/or sulfur are needed in some areas. This would indicate that increasing yields by the use of nitrogen may result in other nutrients becoming a limiting factor in such areas."

Rate of application varies widely as it is influenced by the fertility level of soil, cropping sequence, cultural practices, crop rotation practices, climatic conditions, and many other factors.

There is no consistent difference between the various nitrogen carriers as long as equivalent rates of nitrogen are applied in a similar manner and sulfur is not a limiting nutrient, he told the group, and added that results show there is a residual effect, usually in relation to the rate of application.

David G. Tate, operator of the Triangle Dairy, Boise, Idaho, prepared a paper, "A Dairy Farmer Looks at the Soil Fertility Program," presenting a case history of a worn-out farm that was making only 30 bu. grain yield and less than 2 tons of hay per acre, only 14 years ago.

Today, he said, this same land is producing over 100 bu. grain, 7 tons alfalfa, and 30 tons of corn silage. The transformation was made through a land improvement program built around leveling, drainage and application of commercial fertilizers.

The place of fertilizers in the production of irrigated pastures was discussed in a paper by George Cleveland, assistant superintendent of the Caldwell Branch Experiment Station, Caldwell, Idaho. The paper said that fertility, irrigation and rotation are all factors dependent upon one another in production. In showing results on pasture yields as affected by manure and commercial fertilizers, he said that in most cases, yields were more than doubled from fertilizer use.

The importance of proper pasture management is shown by better utilization of the pasture forage, he declared, for with proper fertilization, the grass has grown fast with an abundance of leaf growth making a more palatable grass for grazing.

Application of nitrogen at 50 lb. an acre was shown to afford the most production for each dollar spent for fertilizer. As to timing of fertilizer applications, the paper said that very little difference can be shown between total yields of these different treatments. "The results do show earlier spring grazing from fall applications, but also less late summer grazing; and also a more uniform yield throughout the grazing season from split applications."

The importance of pasture management in controlling bloat was pointed out, with emphasis placed on heavy application of nitrogen in order to stimulate and increase the growth of grasses, thus giving a good balance between legumes and grasses.

Production figures were given showing that one pasture produced 7,917 lb. 4% fat corrected milk and 317 lb. butterfat. On the basis of \$1.10 lb. for Grade A milk, this pasture produced a gross income of \$348.70 per acre per year over a two-year period.

The chemical analysis for calcium, phosphorus, and protein as affected by fertilizer treatments showed that manure increases the phosphorus content of the forage. Also, the use of phosphorus fertilizer increased the protein and phosphorus content of the pasture.

C. T. Brackney, superintendent of the Sandpoint Branch Experiment Station at Sandpoint, Idaho, said that

soil fertility research conducted on alfalfa by his station is concerned primarily with the "sick alfalfa" problem. This problem, beginning in 1940, has increased in severity until now nearly two thirds of the potential alfalfa acreage in Bonner County alone, is affected. Sweet clover is also affected in a similar manner.

Research conducted by the Sandpoint Station has been limited to fertility and soil amendment investigations although other lines are being followed by the Agronomy Department and Bacteriology Department of the University of Idaho. Field results have been variable with some fields giving considerable response to various fertilizer combinations while in other cases response to different combinations may be present but growth is still severely curtailed by some other factor.

Greenhouse results have shown some promise; however, the work has not been carried on for a long enough period to determine whether these results can be duplicated in the field. Mixed responses were obtained under greenhouse conditions when a micro-nutrient mixture was used; however, no response was obtained when minor elements were used individually.

Experience has indicated that the cause of this problem is probably due at least partially to legume bacteria-soil relationships. In many affected fields scattered plants are found which grow with vigor, and which upon examination show good nodulation. Without exception, sick plants both in the greenhouse and the field are either very poorly nodulated or show no nodules of any kind. Some response has been obtained from nitrogen application.

However, the fact that maximum yields are not obtained from the use of nitrogen indicates that the plant itself must also be affected by this soil condition. Studies are underway in the greenhouse at the present time to determine what response will be obtained from plants growing in these soils when the pH is raised by various soil amendments. No response has been obtained in field tests by the use of lime up to the present time.

A paper by C. E. Nelson, agronomist of the Soil and Water Conservation Branch, Agricultural Research Service, USDA, Washington Agricultural Experiment Station, Prosser, Wash., summarized the results of six field experiments in the Yakima Valley and the Columbia Basin. The objectives were to determine the effect of fertilization in yields and chemical composition of alfalfa hay.

In one experiment, made at the Irrigation Experiment Station near Prosser, annual applications of nitrogen, phosphorus, potash, calcium, sulfur and manure were made for a nine-year period. Since plots receiving phosphate fertilizer ranged from 0.74 to 1.64 tons per acre more than the check plots, it was evident that phosphorus was the limiting factor in production.

No significant response was obtained from the application of the other materials except the plot receiving 10 tons manure annually. This treatment gave a yield comparable with the phosphate plots. Phosphate application in this experiment, Mr. Nelson said, was 150 lb. P_2O_5 per acre annually.

Since the phosphate rate in this experiment was much in excess of that used by the crop, another four-year experiment was carried out in an adjoining field with annual applications of 32 and 64 lb. P_2O_5 an acre and one alternate-year application of 96 lb. an acre of P_2O_5 . The annual rate of 64 lb. maintained higher yields

than the others for the four-year period.

Results from all of the experiments brought the conclusion that excellent stands of alfalfa may be obtained regardless of treatment. The application of 80 lb. nitrogen increased the yield of alfalfa hay the first cutting only. Other treatments did not affect yield. Data obtained from the net water input measurements, and chemical analysis of the water showed that 40 lb. sulfur per acre was applied with the irrigation water for the season.

These experiments emphasize that on land farmed for several years, phosphorus is the main limiting nutrient in alfalfa production. On new lands, a reduction in yield from lack of phosphorus can be expected from as little as three years of cropping with alfalfa. A reduction in yield can be expected if the P_2O_5 level in the plant material drops below 0.50%.

Giving his listeners facts and figures on the value of airplane application of fertilizers and other chemical preparations, Harold Hansen, Farwest General Agency, Seattle, Wash., said that planes are fast, economical and useful in reaching areas where other types of vehicles are unable to penetrate.

"It is true that the airplane cannot drill the fertilizer into the ground," he said, "but with pelletizing and granulation being improved, plus advances being made in foliar application, this flying machine is truly a magic carpet."

Mr. Hansen told of a flier in Idaho, who, with the help of only one man to help load the airplane, applied 60,000 lb. fertilizer a day to 300 acres of land. "How much equipment, time and personnel would be required to duplicate this by ground methods?" he asked. "And what would happen if you wanted to make a ground application at the time of year when the soil is too soft?" He pointed out further, that soil in this soft, damp condition offers the best opportunity for the fertilizer to be carried deep down.

He mentioned forest fertilization as being of importance and discussed in detail the subject of rangeland fertilization. This type of fertilization is particularly adapted to airplane application, he said. Minor elements as well as NPK are also important as materials that lend themselves to airplane application.

K. D. Jacob, head of the Fertilizer and Agricultural Lime Section, USDA, Beltsville, Md., discussed liquid fertilizers, reporting that they have become more and more important during the past 25 years. Further expansion in this field is also foreseen, he said.

Liquid anhydrous ammonia and the so-called nitrogen solutions account presently for some 40% of the total use of fertilizer nitrogen, he said. Consumption of these materials directly in the manufacture of solid mixed fertilizers has grown to the extent that they now supply about half the nitrogen in such fertilizers. They also supply about a third of the nitrogen used for direct application.

Shipments of liquid phosphoric acid for further processing and for direct application, though now comparatively small are increasing in volume, and this material promises to occupy a much more important position in the fertilizer trade.

Considerable expansion in the direct application of ammonium phosphate solutions is expected for at least some of the western states, the speaker said. Interest in the use of liquid mixed fertilizers, formerly confined chiefly to small tonnages applied in irrigation water and as transplant and starter solutions, has recently spread to field crops in certain non-irrigated areas.

DUTCH ELM DISEASE

PROVIDENCE, R.I.—Dutch elm disease, first found in Rhode Island in 1946, has up to this year destroyed 2,686 trees in the state.

CHEMICALS OUTPUT

(Continued from page 1)

The chemical in this group which was produced in the greatest quantity in 1954 was the insecticide DDT. In 1954 the output of this product amounted to 97 million pounds.

Production in 1954 of acyclic pesticides and other acyclic organic agricultural chemicals amounted to 6 million pounds compared with 59 million pounds, reported for 1953. Sales in 1954 were 57 million pounds, valued at \$22 million, compared with 5 million pounds valued at \$20 million in 1953.

The preliminary statistics on production and sales of pesticides and other organic agricultural chemicals given in this report, are more than 95% complete. The complete statistics will be shown in the Tariff Commission's final report on the production and sales of synthetic organic chemicals, which will be issued later this year.

Weather Damages Hay, Tobacco Crops In New England

BOSTON—Massachusetts farmers have lost much of their hay crop to the elements, agricultural agents from various sections of the state reported. Scattered showers, electrical storms, hail storms and rain storms have been almost continuous and severe damage has been inflicted on the hay harvest which is an important source of income for many farms.

A somewhat similar situation exists in Connecticut where it was estimated that the state's tobacco crop had suffered to the tune of \$1,000,000 from a driving rain and hail storm that hit Hartford County.

In the midst of the crop peril from the elements, a 150 mile tornadic alert, extending from west central Vermont to Maine, had farmers worried, but the alert was canceled. Severe thunderstorms hit Vermont and parts of Massachusetts. Winds gusts in Montpelier, Vt., were clocked at 69 miles an hour. Hail stones as large as golf balls pelted Lawrence and North Andover, Mass. Aubrey W. Borden, director of the Massachusetts Agricultural department's division of dairying, says the situation will become critical for dairy farmers this season unless good haying weather comes. A good part of the first hay crop has been stored away green in silos, this silage to be used next winter as cattle feed mixed with the dry hay.

Hay left standing now tends to grow "overripe," the dairying director said. Silage has the advantage of being harvested green, chopped up and stored away, remaining moist because of hard packing. It can be harvested earlier in the season, even in rain, and the early start allows the farmer to refertilize for a second and third hay crop.

Farmers in Essex, Middlesex and Worcester counties were reported hardest hit. They must gamble on when to cut and whether to store in barns before entirely dry.

MORE LIVESTOCK

CLEMSON, S.C.—South Carolina farmers who have traditionally depended on cash crops for their main income are more and more turning to livestock as a dependable source of income. M. H. Sutherland, Clemson Agricultural College extension agricultural economist, points out that while 30 years ago returns from livestock and livestock products accounted for only 10% of the farm income in this state by 1954 the proportion of income from livestock had risen to 28% of the total.



Norman E. McGrath

MANAGER—Norman E. McGrath has been appointed general manager of the Buffalo plant of the Percy Kent Bag Co., Inc., Richard K. Peek, Kansas City, president of the firm announced recently. Mr. McGrath, who formerly was sales manager at Buffalo, succeeds Andrew O. Peek, who resigned as vice president and Buffalo manager.

Farmer Loses in Test Of Crop Acreage Laws

PHILADELPHIA—A chicken farmer's suit challenging the constitutionality of federal crop acreage laws was thrown out by the U.S. Court of Appeals for the Third District here. The court upheld a decision by Federal District Judge Allan K. Grim, who dismissed the case against the government last February on the grounds that the issues involved had already been decided in favor of the government when the U.S. Supreme Court upheld the constitutionality of federal farm legislation.

Joseph Blattner, 81-year-old poultryman from Norristown, Pa., had contended the government's program would deprive him of property without due process of law. He asked that the government be enjoined from preventing his growing the usual feed for his 6,000 hens and from collecting a \$179.20 penalty for raising more wheat than his government allotment.

The appeals court also upheld the federal judge because the suit was against the U.S., and the plaintiff had not obtained the government's consent to be sued, as required by law.

Test Shows Value of Cotton Insect Control

LUBBOCK, TEXAS—Texas farmers are finding that they must control minor cotton insects as well as the major ones such as boll worms and army worms, if they are to make a profit.

This was well illustrated last year when check plots were established by the Lubbock Experiment Station for control of thrips and fleahoppers. Plantings were made on two farms, and one plot on each place was treated with dieldrin and toxaphene just after the cotton entered the fruiting stage. The other plots were left untreated, though cultivation and irrigation were the same on all areas.

At the end of the year the cotton receiving the chemicals made an increased profit of \$123.83 per acre more than the untreated plot when three applications were used, and \$86.57 when only two were applied. The controlled cotton had over 58% of the bolls matured when frost came, while the untreated cotton had only 30% of matured bolls.

Cost of aerial spraying on the treated land averaged about \$2.50 per acre.

Early Season Cotton Insect Control Pays In Texas Experiments

LUBBOCK, TEXAS—Early season insect control pays big dividends to the cotton farmer, according to tests conducted near Lubbock last year by the Texas Experiment Station.

These early insects in West Texas are fleahoppers and thrips which often attack cotton within a week or so after it comes out of the soil. Heretofore farmers did little poisoning for these tiny insects, and many cotton growers believed the damage done was never serious.

The test plots where toxaphene was applied produced 653 lb. seed cotton per acre more than the untreated plots. Three applications of dieldrin increased yields of 934 lb. of seed cotton over the untreated cotton.

Close inspection revealed that thrips and fleahoppers prevent heavy fruiting of the cotton plant and caused the squares to drop off. Heavy infestations left untreated usually result in large stalks with only a few bolls of cotton at harvest time.

Because of these tests, many farmers in the vicinity have already treated their fields to prevent heavy build-ups of these insects.

Cotton Mechanization Conference Scheduled For Sept. 7-8

COLLEGE STATION, TEXAS—Relation of farm mechanization to cotton's competitive fight for markets will be stressed at the ninth annual Beltwide Cotton Mechanization Conference here, Sept. 7-8.

The farm equipment industry, U.S. Department of Agriculture, state experiment stations and extension services, farm organizations and other groups will be represented with the cotton industry at the meeting.

Conferees will take a close look at mechanical stripping in terms of its effect on production costs, and in terms of market needs for the quantities and qualities of cotton currently associated with this type of harvesting.

The growing problem of preserving lint quality in mechanized production also will be studied in detail, especially from the standpoint of improving the skill of machine operators. Opportunities for ginners to do a better job of handling rough-harvested seed cotton also will be analyzed.

Widely known authorities will discuss the impact of major expansions in public farm research and education on mechanization and on cotton's competitive position. Farm equipment industry spokesmen will report on their plans for improving dealer service programs to aid growers. They also will outline their research efforts pointed directly toward problems in cotton production and marketing.

Mechanical equipment needs for insect control, irrigation in the rain belt and the influence of planting methods and spacing on production and harvesting efficiency also will be discussed. A field demonstration will feature defoliation, desiccation and harvesting with mechanical strippers. The conference will be sponsored by the National Cotton Council, in cooperation with the Texas A&M College system, farm equipment industry and USDA.

Joins Council

MEMPHIS—Emmett E. Robinson, director of public relations and acting head of the journalism department at Mississippi State College for Women, will join the sales promotion staff of the National Cotton Council, July 15. The appointment has been announced by Ed Lipscomb, the council's director of sales promotion and public relations.

CIPPERLY

(Continued from page 1)

that even during the heavier production in 1954, where overall sales increased only from 334 million pounds in 1953 to 336 million pounds in 1954, the dollar volume of 1954 sales was up at a substantially greater rate.

For example, dollar sales for these chemical products in 1954 are estimated by the tariff commission to have been approximately 124 million dollars as compared with a sales volume of 119 million in 1953.

This latter condition leads to the reasonably valid conclusion that the basic chemical producers in 1954 did not sense any accumulation of inventory to the point where the Jan. 1, 1955, inventory position was dangerous.

Digging deeper in the government officials' analysis of the Jan. 1, 1955, inventory position, it is disclosed that these analysts say the increase in the past two years is spread over a wide variety of products.

For example, the Tariff Commission study reveals that insecticide production in 1954 was approximately 235.5 million pounds, whereas sales amounted to 200.3 million pounds. This excess of production over sales of about 35 million pounds should be construed as normal inventory pipeline requirements for pesticides, and not an alarming inventory increase.

On balance, government officials believe that the surface indications of a sharp advance in inventory as shown in the Tariff Commission's figures cannot be construed as a danger signal, but rather is indicative of a reasonably comfortable industry position, particularly since 1954 closed its books on a reasonably firm price situation as shown by dollar sales volume.

Fumigation Treatment For Fruit Fly Reported

BERKELEY, CALIF.—Satisfactory commodity treatments for citrus will be available should a quarantine against the Mexican fruit fly be necessary in Southern California and if current experiments are successful, according to Dr. David L. Lindgren, entomologist on the University of California's Riverside campus.

The scientist has returned from Mexico City where he collaborated with U.S. Department of Agriculture entomologists in testing the effectiveness of treatments originally developed against the Oriental fruit fly, a cousin of the Mexican pest.

The researchers found that fumigation of grapefruit with ethylene dibromide will kill larvae of the Mexican fruit fly at dosages low enough not to affect the flavor or condition of citrus grown in California.

The effects of the fumigants on California citrus had previously been tested at the Citrus Experiment Station in Riverside in cooperation with Dr. Walton B. Sinclair, chairman of the department of plant biochemistry.

CLEAN GRAIN DRIVE

FARGO—Grain producers in North Dakota are going to hear a lot about the problem of keeping food grain clean the week of July 11 to 16—about the time grain storage places and handling equipment should be put in shape to take care of the 1955 crop.

A special publicity campaign has been mapped out by farm organizations, state and federal agencies, the grain industry and North Dakota Agricultural College Extension Service to reach a climax July 11 to 16, says Wayne J. Colberg, entomologist of the NDAC Extension Service. Mr. Colberg is secretary of a state committee to work on the grain sanitation problem.

Crop Acreage in Columbia Basin Shows Increase

EPHRATA, WASH.—Acreage in crops in the Columbia Basin project of central Washington is up 38,900 acres this year.

Cultivated acreage in the developing project reached 143,483 this spring, compared to 104,569 acres in crops in 1954. There are 163,773 acres available for cultivation this year which means that 13% of the acreage within farm units cultivated is idle.

As in previous years the most popular crop is dry edible beans of which 39,184 acres are planted. Wheat occupies the second largest acreage, 24,000 acres. Last year 36,767 acres of beans and 11,966 acres of wheat were grown. Beans yielded 21.4 cwt. and wheat 43 bu. to the acre in the project in 1954.

The coldest May on record and windy weather made planting operations difficult and have retarded the growth of some crops, the report said. On farms where good management practices are followed yields are expected to be good.

Potato acreage also increased this year, jumping from 9,000 acres in 1954 to 16,160 acres. Sugar beet acreage, thanks to cutbacks imposed by the U.S. Department of Agriculture, dropped from 8,641 last year to 7,501.

Crops with government support or those which can be produced under contract with advances on seed and fertilizer are being grown on more than 60% of the acreage this year.

Oats, barley and rye are being grown on about 9,000 acres, peas for seed on 15,500 and peas for freezing on 1,500.

Alfalfa hay, clover (principally for seed) and irrigated pasture are being grown on 23,500 acres compared to 15,800 last year. This indicates an increasing interest in dairy and livestock operations as some of the lighter soil areas in the lower Basin come under cultivation this year.

Specialty crops are numerous but in total acreage account for only 1% of the land being farmed. Included in this group are asparagus, mint and watermelons. Orchard, grape and other fruit plantings are numerous enough to give promise of things to come.

Last year the project farmers produced crops with an estimated gross value of \$16 million.

The first block near Pasco came under cultivation in 1948 and 18 blocks are under cultivation this year—five of them on "test year," the year in which water is available but farmers pay water charges only on what they use. Other blocks are on their first or subsequent "development years." The crop value has climbed steadily each year. In 1953 it was estimated at \$9 million.

This year's acreage report was the result of a survey conducted farm-to-farm between June 1 and 10 by the bureau of reclamation, agriculture marketing service, soil conservation service and extension agents of Grant, Adams and Franklin counties. The report was issued by R. M. Turner, Washington extension director at Washington State College, Pullman.

Represents Albemarle

RICHMOND, VA.—C. W. Ingham has been appointed sales representative in Ohio for the multiwall bag division of the Albemarle Paper Manufacturing Co. by J. R. Clements, sales manager of Albemarle's multiwall division.

In addition to Ohio, Mr. Ingham will also cover Michigan from the office in Columbus, Ohio.

Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Northeastern states.

VIEWPOINT

Safety Pays in Small Fertilizer Plants

In connection with the fertilizer industry's effort to increase the number of small companies cooperating in the fertilizer safety movement, many smaller firms are no doubt wondering, "What's in it for me?" It is natural to weigh the question of whether membership in the National Safety Council is worth while.

This subject has been considered by E. J. Buhner, of the Buhner Fertilizer Co., Seymour, Ind., and his conclusions are well defined in the following article, written from the viewpoint of a fertilizer manufacturer:

"Those engaged in business today must realize the importance of accident prevention work. The rapid development of the fertilizer industry makes safety work a matter of necessity.

"What was considered reasonably safe operation twenty years ago is not permissible today. The problem now requires great care in the enforcement of rules, in the selection and training of employees, in the elimination of physical conditions that might contribute to accidental occurrences. Exhaustive research is needed to determine actual facts and conditions of each accident. A constant atmosphere of care in daily operations is essential. These various activities cannot be conducted effectively by any one individual, department or even by any one company. They require the combined effort of all individuals in industry as well as the public.

"Accident prevention is largely a matter of creating a high degree of safety consciousness among individuals. This can be accomplished in industry only when the management is in full accord with accident prevention, and when constant effort is made to stimulate and maintain safety enthusiasm among employees.

"One may say that, from the standpoint of economy, accident prevention is good business. From the humanitarian standpoint, accident prevention is a duty. I know that the fertilizer section of the National Safety Council subscribes to the latter theory.

"Effort should be concentrated principally on a campaign of education to develop safety consciousness among the employees. The success of such a campaign depends on the individual responsibility which all employees are made to feel. The supervisory staff, in particular, can be most helpful in achieving this for, through its efforts, the safety consciousness of the workers can be developed to a high degree.

"A safety program should stress the seriousness of accidents from a physical standpoint. It should emphasize particularly the need for prompt attention to minor injuries to avoid infection and subsequent results. It should include the liberal use of eye-catching safety posters portraying accident hazards and the effects of unsafe workmanship or careless habits.

"The National Safety Council was organized in 1913 to provide a medium for the exchange of safety ideas and experiences. As the council grew . . . more and more industrial sections came into being. The Fertilizer Section of the National Safety Council is an organization made up of fertilizer plants, each of which may benefit from the accident experience of the other. The paramount problem in the industry has been the staggering number of man-hours lost from production on account of disabling injuries."

"Until December, 1952, the fertilizer group or committee was a part of the Chemical Section. At that time the inter-

ested representatives who served on this committee, representing fertilizer companies which were members of the Council through the chemical section, decided that the fertilizer industry should have section status. So, after meeting all requirements with commendable rating, the fertilizer section of the National Safety Council came into being.

"At that time 16 companies were admitted into the section. This included the American Plant Food Council and the National Fertilizer Association, organizations which maintained blanket memberships in the council, and serviced their members, who did not belong to the council, with safety material. Since the birth of the fertilizer section, many of the affiliates of these two organizations have improved that service by becoming direct members of the council and in turn the fertilizer section. And, they have taken an active part by participating in the program of the section.

"The first executive committee of the section plotted a three-year program, geared to sustain continued effort to reduce accident and fire losses in the fertilizer industry.

"This section realized two major problems are peculiar to the industry. The operations are seasonal and the industry is made up, in large part, of comparatively small operators, which are unable, due to their size, to stand entirely on their own records. They are affected, insofar as compensation and fire insurance rates are concerned, by the experience of other operators. Due to the seasonal nature of the industry, many transient employees are hired during the rush season . . . labor turnover is high.

"A motivation study project is under way to attack this problem and the high incidence of accidents so that suitable aids to reduce the accident rate can be developed in the form of films, safetygraphs, leaflets and other training aids in order to achieve maximum effectiveness.

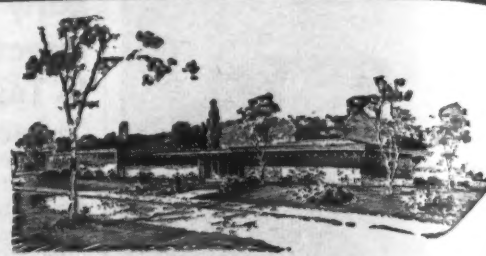
"Now—What's in It for Me . . . if I affiliate my company with the National Safety Council and in turn with the fertilizer section?

"Let me repeat: the council has continuously served as a laboratory in which accidents have been analyzed as to their cause and means of combating them. The council today is the research division, publishing house and source of safety ideas for over 25,000 plants of every size and every industry. Through the exchange of ideas and experiences of the members of the fertilizer section, records show a gratifying decrease in the accident frequency in many member plants. This improvement has brought about increased efficiency and better employee relations.

"The council provides section members with technical and engineering data for making equipment and work areas safe; supervisor materials that show the supervisor how to train for safety; employee material, posters, rule booklets, etc., and consultation service by its engineers.

"From the viewpoint of human relations, the safety program means desirable working conditions, prevention of suffering, and saving of life. From the viewpoint of general management, the safety program means increased efficiency, decreased costs, and better business. These are the dividends gained by membership in the council and participation in the program of the fertilizer section.

"So much for so little—\$25 annual dues for plants with less than 100 employees."



CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at \$5 for one year, \$9 for two years (\$8 a year outside the U.S. and possessions). Single copy price, 25¢.

LAWRENCE A. LONG

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MEETING MEMOS

July 14-15—Southwest Fertilizer Conference and Grade Meeting, Buconeer Hotel, Galveston, Texas.
July 20-21—Great Plains Agricultural Ammonia Assn. Midwest Trade Show & Field Day; Business Session for Members July 20 at Hotel Fort Des Moines, Des Moines, Iowa; Field Day July 21 near Ames; James Andrew, Box 447, Jefferson, Iowa, Secretary.
July 27-29—Northeast Branch, American Society of Agronomy, University Park, Pa.
Aug. 1-5—National Shade Tree Conference, Annual Meeting, Mar Monte Hotel, Santa Barbara, Cal.; L. C. Chadwick, Secretary-Treasurer, Ohio State University.
Aug. 8-10—Summer Meeting of North Central Division, American Phytopathological Society, Wooster, Ohio; further information from H. C. Young, Dept. of Botany & Plant Pathology, Ohio Agricultural Experiment Station, Wooster, Ohio.
Aug. 9-11—Ohio Pesticide Institute Meeting and Field Tour, Wooster, Ohio; Dr. J. D. Wilson, Ohio Agricultural Experiment Station, Wooster, Secretary.
Aug. 10—Kentucky Fertilizer Conference;

Guignol Theatre, University of Kentucky, Lexington.
Aug. 15—National Joint Committee on Fertilizer Application, Cooperative Meeting with the American Society of Agronomy, University of California, Davis Campus.
Aug. 15-19—American Society of Agronomy and Soil Science Society of America, University of California, Davis Campus.
Aug. 15-20—Farm & Home Mechanization Pageant, Michigan State College, East Lansing, Mich.
Sept. 7-8—Corn Belt Anhydrous Ammonia Conference, University of Illinois, Champaign-Urbana Campus, Advance Registrations Room 216, Davenport Hall, Urbana, Ill.
Sept. 7-8—Beltwide Cotton Mechanization Conference, Texas A&M College, College Station, Texas, National Cotton Council, P.O. Box 18, Memphis 1, Tenn.
Sept. 7-9—National Agricultural Chemicals Assn., Spring Lake, N.J.; Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.
Sept. 7-9—Ninth Annual Beltwide Texas A&M College, National Cotton Council of America, Box 18, Cotton Mechanization Conference, Memphis 1, Tenn.
Oct. 17-18—Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago; Thomas J. Clarke, Chairman.
Oct. 27—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. LaSalle St., Chicago, Ill.

Nov. 2-3—Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend, Ore.; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.
Nov. 4—Fertilizer Section, South Carolina Annual Accident-Prevention Conference, Hotel Francis Marion, Charleston, S.C.; Anton L. Foster, International Minerals & Chemical Corp., General Chairman.
Nov. 3-4—Northeastern Division, American Phytopathological Society, Eastern States Farmers Exchange, Inc., 26 Central St., West Springfield, Mass.; B. H. Davis, Department of Plant Pathology, Rutgers, University, New Brunswick, N.J., secretary.
Nov. 7-8—California Fertilizer Assn., Thirty Second Annual Convention, Hotel Mark Hopkins, San Francisco; Sidney H. Bierly, Executive Secretary & Manager, 475 Huntington Drive, San Marino, Cal.
Nov. 17-18—Nitrogen Solution Field Day, National Nitrogen Solution Assn., State Armory, Springfield, Ill.; Roy F. Broyhill, Dakota City, Neb., meeting chairman.
Nov. 29-Dec. 2—Entomological Society of America, Netherlands Plaza Hotel, Cincinnati.
Dec. 5-7—Chemical Specialties Manufacturers Assn., 42nd Annual Convention, Roosevelt Hotel, New York; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., Executive Secretary.
Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.
Dec. 15-16—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Sponsored by the National Cotton Council.
Dec. 28-30—American Phytopathological Society, Atlanta, Ga.; Glenn

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

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S. Pound, University of Wisconsin, Madison, Wis., Secretary.

1956

Jan. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York, W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Feb. 15-17—Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., Secretary-Treasurer.

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BRADLEY & BAKER

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Croplife's advertising sales staff includes full-time staff members in each branch office, with several years of experience in businesspaper advertising, whose first objective is to be of service to advertisers and agencies interested in the field served by Croplife. These repre-

sentatives know agriculture thoroughly and their experience in industries and organizations serving the agricultural field qualifies them highly for their advertising sales and service assignments. Included in this wealth of experience are previous assignments with agricultural experiment stations, the United States Department of Agriculture and daily and weekly newspaper work in agricultural communities.

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